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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Army										Date: February 2018		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS							
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	-	63.842	87.643	83.155	-	83.155	82.105	96.663	76.241	64.575	Continuing	Continuing
ES9: Advanced Tactical Parachute System	-	2.858	5.840	6.710	-	6.710	6.617	1.829	2.965	2.964	0.000	29.783
EW4: Crew Served Weapons Engineering Development	-	7.708	9.251	29.611	-	29.611	26.362	39.780	18.041	18.983	0.000	149.736
FF2: Small Arms Fire Control	-	0.000	20.117	20.201	-	20.201	21.463	10.163	11.254	4.967	0.000	88.165
FI2: Lightweight 30mm Cannon	-	0.000	5.500	0.000	-	0.000	1.384	0.000	0.000	0.000	0.000	6.884
S58: Soldier Enhancement Program	-	9.528	3.353	2.885	-	2.885	2.940	2.999	3.016	2.814	0.000	27.535
S60: Clothing & Equipment	-	8.401	7.022	5.355	-	5.355	6.453	6.724	5.015	4.850	0.000	43.820
S61: Acis Engineering Development	-	3.726	4.011	3.612	-	3.612	2.990	2.866	2.926	2.969	Continuing	Continuing
S62: Counter-Defilade Target Engagement - SDD	-	9.244	0.000	2.000	-	2.000	0.000	0.000	0.000	0.000	0.000	11.244
S63: Individual Weapons Engineering Development	-	7.631	6.961	5.756	-	5.756	6.129	23.352	22.556	16.810	0.000	89.195
S64: Common Remotely Operated Wpn Sys (CROWS)	-	11.548	22.500	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	34.048
S70: Personnel Recovery Support System (PRSS)	-	1.084	1.330	0.968	-	0.968	0.990	0.468	0.642	0.563	Continuing	Continuing
VS5: Soldier Protective Equipment	-	2.114	1.758	6.057	-	6.057	6.777	8.482	9.826	9.655	0.000	44.669

Note

FY 2019 New starts include Next Generation Squad Automatic Rifle (NGSAR) and Increased Barrel Life Replace Chrome.

A. Mission Description and Budget Item Justification

Fiscal Year (FY) 2019 budget request funds Infantry Support Weapons. This Program Element (PE) Engineering and Manufacturing Development (EMD) manages the Soldier as a system, with the goal of increasing Soldiers' combat effectiveness, increasing survivability, and improving the Soldiers' quality of life. It develops and tests prototypes of weapons, clothing, equipment, and other items useful to support the Soldier.

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<p>Project ES9 (Advanced Tactical Parachute System) supports efforts to improve Static Line (SL) and Military Free Fall (MFF) personnel parachutes and associated equipment to include canopy improvements based on integration of new technology with the goal of enhancing the insertion capability of the airborne soldier and increasing the performance, safety and durability of personnel airdrop equipment.</p> <p>Project EW4 (Crew Served Weapons Engineering) supports efforts to transition components or prototypes from Small Arms Improvement, Project S54, Program Element 0603827A, (Budget Activity 4) and other domestic and foreign sources of small arms weapons to demonstrate, test and evaluate capability near or at planned operational requirements.</p> <p>Project FF2 (Small Arms Fire Control (SAFC)) supports optimized fire control devices to support Squad (S), Crew Served (CS) and Precision (P). SAFC shall increase the probability of hit and decrease time to engage across a range of small arms weapon systems, with a direct-view optic that allows for quicker and more accurate target detection and recognition.</p> <p>Project FI2 (Lightweight 30mm Cannon) provides increased lethality modification to the Joint Light Tactical Vehicle (JLTV), it serves as the Infantry Brigade Combat Team (IBCT) light reconnaissance vehicle, an upgraded medium caliber weapon will be developed, tested and evaluated for integration into a modified remote weapon station.</p> <p>Project S58 (Soldier Enhancement Program) supports accelerated integration, modernization, and enhancement efforts of lighter, more lethal weapons, and improved Soldier items including lighter, more comfortable load-bearing equipment, field gear, survivability items, communications equipment, and navigational aids.</p> <p>Project S60 (Clothing and Equipment) supports pre-production development of state-of-the-art individual clothing and equipment to improve the survivability, mobility and sustainment affecting the quality of life of the individual Soldier.</p> <p>Project S61 (Aircrew Integrated Systems) provides System Development programs with improved aviator safety, survivability, and human performance that amplify the warfighting effectiveness and facilitates full-spectrum dominance of the Army aircraft including the AH-64 Apache/Longbow, CH-47 Chinook, UH/HH-60 Blackhawk, Light Utility Helicopter, and Armed Reconnaissance Helicopter.</p> <p>Project S62 (Counter-Defilade Target Engagement) the XM25, Individual Airburst Weapon System (IAWS) delivers a 25mm programmable high explosive airburst (HEAB) round to defeat defilade and point area targets out to approximately 600 meters. Accurate and lethal engagement of defilade targets at the squad level is the number one capability gap identified by the United States Army Infantry Center (USAIC).</p> <p>Project S63 (Small Arms Improvements) demonstrates engineering development models or integrated commercial items designed to enhance lethality, target acquisition, fire control, training effectiveness, and reliability for small arms weapon systems and ammunition. Programs include Improved Weapons Coatings, Personal Defense Weapon, 30 Round 5.56mm Magazine, Modular Handgun System (MHS), Precision Sniper Rifle (PSR), Sub Compact, and Interim Combat Service Rifle (ICR).</p>		

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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>
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Project S64 (CROWS) continues enhancing CROWS capability and reliability to increase its application across combat and tactical platforms. This capability enhances the Soldier's survivability, lethality and situational awareness.

Project S70 (Personnel Recovery Support System) provides system research, development and testing of the Personal Recovery Support System/Personnel Recovery Support Equipment supporting operations to report and locate isolated, missing, detained or captured Soldiers.

Project VS5 (Soldier Protective Equipment) supports engineering and manufacturing development of Individual Soldier Ballistic Protection equipment. It will leverage advancements in technology to continue incremental improvements to body armor (to include improved outer tactical vests, plate carriers, and helmets) and other personal protective equipment.

B. Program Change Summary (\$ in Millions)	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019 Base</u>	<u>FY 2019 OCO</u>	<u>FY 2019 Total</u>
Previous President's Budget	66.943	87.643	73.419	-	73.419
Current President's Budget	63.842	87.643	83.155	-	83.155
Total Adjustments	-3.101	0.000	9.736	-	9.736
• Congressional General Reductions	-0.026	-			
• Congressional Directed Reductions	-3.940	-			
• Congressional Rescissions	-	-			
• Congressional Adds	3.000	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.135	-			
• Adjustments to Budget Years	-	-	9.736	-	9.736

Change Summary Explanation

Increase funding in FY2019 is for the development of Next Generation Squad Automatic Rifle (NGSAR).

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Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) ES9 / Advanced Tactical Parachute System			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
ES9: Advanced Tactical Parachute System	-	2.858	5.840	6.710	-	6.710	6.617	1.829	2.965	2.964	0.000	29.783
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Funding line established in FY17 for the Advanced Tactical Parachute System. Efforts were previously executed in Program Element 0604601A S60.

A. Mission Description and Budget Item Justification

This funding supports engineering and manufacturing development tasks related to Static Line (SL) and Military Free Fall (MFF) personnel parachutes and auxiliary equipment with the goal of enhancing the insertion capability of the airborne soldier and increasing the performance, safety and durability of personnel airdrop equipment. Funds improvements and testing/evaluation of personnel parachute systems. Includes integration and interface on the Soldier system.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Advanced Tactical Parachute System	2.858	5.840	6.710	-	6.710
Description: Funds are a new Project established in FY17. Efforts were previously executed in Program Element 0604601A S60.					
FY 2018 Plans: Efforts include enhanced capabilities transition from ET8 to include Developmental Testing and Operational Testing (DT/OT), and purchasing contract data requirements for the Enhanced Electronic Automatic Activation Device (E/EAAD) for use with the RA-1 Advanced Ram Air Parachute System. Complete DT/OT for PARANAVSYS. Obtain Milestone C (MS C) decision in FY18 and Full Material Release (FMR) in FY18 for PARANAVSYS. Procure test assets and conduct testing on T-11R (Reserve) improvements to optimize packing of both systems (T-11 and T-11R) to reduce system profile and increase number of parachutists that can be carried on C-130 and C-17 aircraft. Conduct Operational Tests on and purchasing contract data requirements for the Enhanced Electric Automatic Activation Device (E/EAAD). Conduct developmental tests for Military Free Fall Altimeters. Conduct Salt Water immersion tests to determine impact on service life of RA-1. Conduct B-line riser (allows for increased time under canopy) collapse tests on RA-1. Parachutists Oxygen Delivery System (PODS) Testing to support MS C in FY2021. Test newly developed hardware using composite materials to reduce jumper weight. Conduct over the ramp jumps T-11 testing utilizing C-17 to support long range clandestine insertion with the use of Intermediate Staging Base (ISB). Prove out propacking procedure for repacking the free fall parachutes. Update RA-1 Technical manuals to reflect packing procedures improvement. Identify					

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B. Accomplishments/Planned Programs (\$ in Millions)								FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
<p>and test Army material solution for flotation devices based on user defined requirements. Test and validate material solution developed by Small Business Innovative Research (SBIR) effort to address shrinking and mold associated with T-11 deployment sleeve.</p> <p><i>FY 2019 Base Plans:</i> Complete DT/OT for EEAAD; obtain MS C decision in FY19 and Full Material Release (FMR) in FY19. Complete DT/OT for Military Altimeters; obtain MS C decision in FY21 and Full Material Release (FMR) in FY21. Continue DT/OT on Parachutist Oxygen Deliver System (PODS) to support MS-C in 2021. Continue conduct of testing to support improvement to parachute systems to include RA-1 Double Bag Static Line (DBSL) over the ramp jumps on C-17 aircraft; service life extension for RA-1, T-11 and MC-6 parachutes; and reduction of glide ratio for the RA-1 parachute system.</p> <p><i>FY 2018 to FY 2019 Increase/Decrease Statement:</i> Funding increase in Advanced Tactical Parachute system portfolio is due to anticipated increase in future requirements in FY18 and FY19.</p>												
Accomplishments/Planned Programs Subtotals								2.858	5.840	6.710	-	6.710
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost	
• MA7801: Advanced Tactical Parachute System	16.611	28.440	41.610	-	41.610	48.819	60.280	54.264	45.000	0.000	295.024	
• ET8: Personnel Airdrop System Development	0.664	0.495	0.400	-	0.400	0.300	1.282	1.280	1.835	0.000	6.256	
Remarks												
D. Acquisition Strategy												
Acquisition strategies for these programs vary in methods, and range from: 1) Material Change programs that result in engineering changes to existing systems to; 2) Traditional development programs that include an Engineering and Manufacturing Development phase ranging in duration from 12 to 48 months, depending on the level of complexity and testing required.												
E. Performance Metrics												
N/A												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) ES9 / Advanced Tactical Parachute System					
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Dev Contracts	C/FFP	Various : Various	-	1.574		4.000		3.410		-		3.410	0.000	8.984	-
Dev Sys Engineering Spt	MIPR	Various : Various	-	0.200		0.200		0.200		-		0.200	0.000	0.600	-
Subtotal			-	1.774		4.200		3.610		-		3.610	0.000	9.584	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Misc Support Costs	MIPR	NSRDEC : Natick, MA	-	0.200		0.331		0.400		-		0.400	0.000	0.931	-
Subtotal			-	0.200		0.331		0.400		-		0.400	0.000	0.931	N/A
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
DT/OT	MIPR	various : various	-	0.884		1.309		2.700		-		2.700	0.000	4.893	-
Subtotal			-	0.884		1.309		2.700		-		2.700	0.000	4.893	N/A
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	2.858		5.840		6.710		-		6.710	0.000	15.408	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army

Date: February 2018

Appropriation/Budget Activity

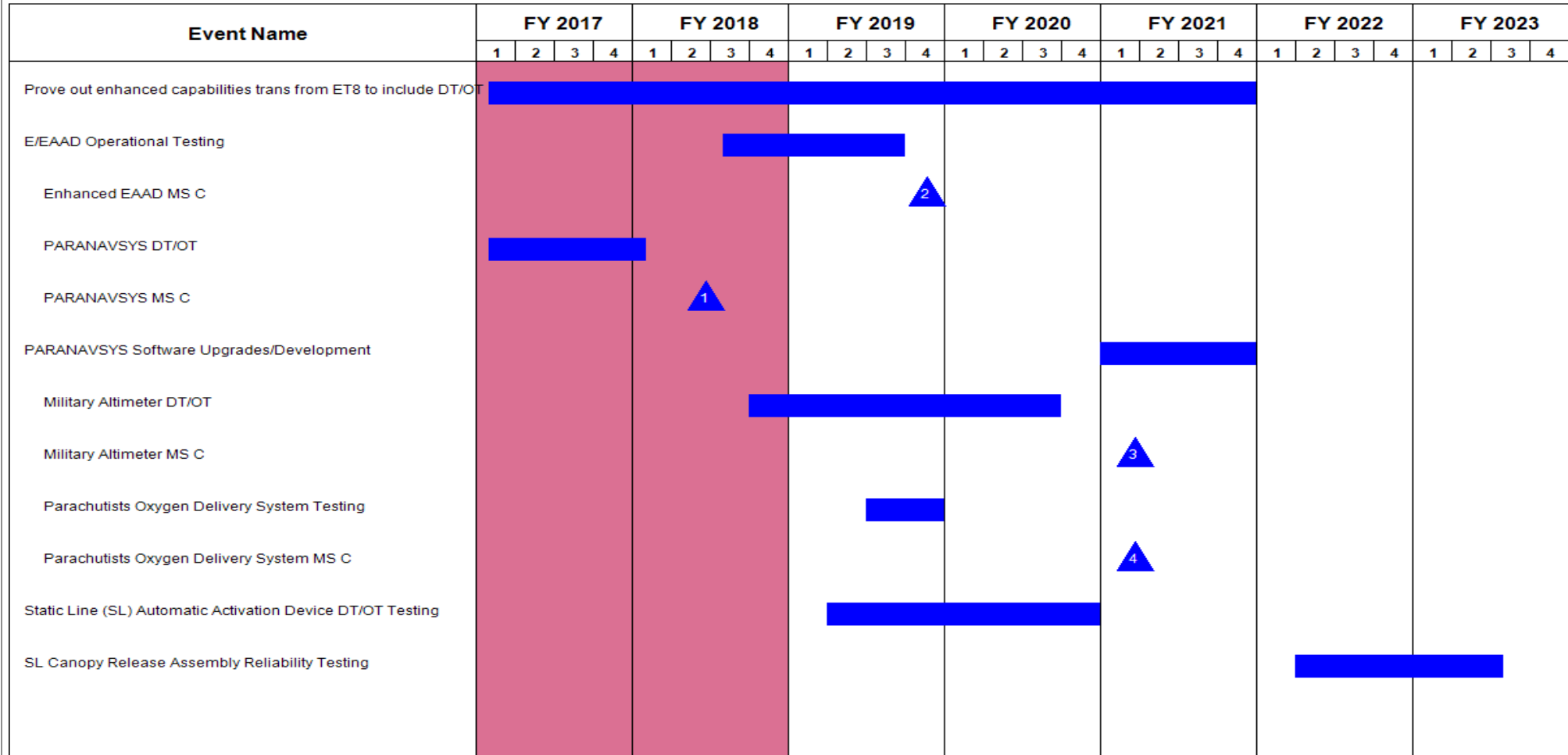
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R-1 Program Element (Number/Name)

PE 0604601A / *INFANTRY SUPPORT WEAPONS*

Project (Number/Name)

ES9 / *Advanced Tactical Parachute System*



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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>	Project (Number/Name) <i>ES9 / Advanced Tactical Parachute System</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Prove out enhanced capabilities trans from ET8 to include DT/OT	1	2017	4	2021
E/EAAD Operational Testing	3	2018	3	2019
Enhanced EAAD MS C	4	2019	4	2019
PARANAVSYS DT/OT	1	2017	1	2018
PARANAVSYS MS C	2	2018	2	2018
PARANAVSYS Software Upgrades/Development	1	2021	4	2021
Military Altimeter DT/OT	4	2018	3	2020
Military Altimeter MS C	1	2021	1	2021
Parachutists Oxygen Delivery System Testing	3	2019	4	2019
Parachutists Oxygen Delivery System MS C	1	2021	1	2021
Static Line (SL) Automatic Activation Device DT/OT Testing	2	2019	4	2020
SL Canopy Release Assembly Reliability Testing	2	2022	3	2023

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Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) EW4 / Crew Served Weapons Engineering Development			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
EW4: Crew Served Weapons Engineering Development	-	7.708	9.251	29.611	-	29.611	26.362	39.780	18.041	18.983	0.000	149.736
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

FY 2019 New starts include Next Generation Squad Automatic Rifle (NGSAR) and Increased Barrel Life Replace Chrome.

A. Mission Description and Budget Item Justification

The Crew Served Weapons Engineering and Manufacturing Development (EMD) program provides funds to transition components or prototypes from Small Arms Improvement, Project S54, Program Element 0603827A, (Budget Activity 4) and other domestic and foreign sources of small arms weapons to demonstrate, test and evaluate capability near or at planned operational requirements. Crew Served Weapons systems include weapons ranging up to 40 millimeter in caliber. Current and future efforts focus on system improvements designed to enhance lethality, target acquisition, fire control, usability, training effectiveness and reliability of weapons to include ammunition when developing and/or evaluating standard and non-standard weapons. Focus areas include system development, integration (to include human-systems), demonstration, test and evaluate components, prototypes and operational system prototypes of small arms weapons and/or enhancements. Benefits include continuous improvements to small arms weapons, fire control equipment, optics, gun barrels, ancillary equipment, training devices, component mounts, weapon mounts, and weapon/ammunition interface of current small arms fleet or new weapon systems.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: New Weapons	3.215	3.071	28.786	-	28.786
Description: Development of new crew served weapons					
FY 2018 Plans:					
M3/M3E1 Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS): Completes Full Materiel Release for M3. Complete Urgent Materiel Release for M3E1 w/Fire Control. Begins developmental testing and complete safety confirmation in support of Type Classification and Full Material Release for the M3E1 w/Fire Control.					
Precision Sniper Rifle (PSR): Continues to support SOCOM full and open competitive source selection of PSR weapons with continued solicitation preparation and an Request For Proposal (RFP) release expected in 2QFY18. Support SOCOM in Phase II weapon testing of up-to three (3) IDIQ contracts awarded in 4QFY18. Complete PSR ammunition (XM1162 & XM1163) production RFP with release in 3QFY18.					

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
New Weapon Evaluations and Assessments: Initial evaluation and assessment of new weapons. FY 2019 Base Plans: FY 2019 New start: Transition of technologies from Program Element 0603827A S54: Next Generation Squad Automatic Rifle (NGSAR): Will work to coordinate and develop the Capability Development Document (CDD), Acquisition Strategy, Capability Production Document (CPD), and provide data from various technologies to better inform stakeholders. Begin EMD phase for the Next Generation Squad Automatic Rifle with a single vendor. M3/M3E1 Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS): Will complete developmental testing and obtain Type Classification and Full Materiel Release for M3E1 w/Fire Control. Precision Sniper Rifle (PSR): Will continue supporting SOCOM testing of up-to three (3) PSR systems with a down-select decision to one (1). Will purchase PSRs to support Army unique Production Qualification Testing, IOT&E, and airborne deployment testing. Will award PSR ammunition production XM1162/XM1163 contracts. New Weapon Evaluations and Assessments: Will perform initial evaluation and assessment of new weapons. FY 2018 to FY 2019 Increase/Decrease Statement: Increased funding due to New Start of Next Generation Squad Automatic Rifle.						
Title: Crew Served Weapons Enhancements Description: Enhancements and developments of Crew Served weapons FY 2018 Plans: M2 Lightweight Program - Investigates alternative materials (i.e. titanium) in order to lighten the Warfighter's load, to improve Soldier mobility, respond to vehicle weight restrictions, improve weapon parts life, increase durability and potentially increase performance. Manufacture lightweight titanium weapon parts, assemble improved parts into legacy weapons, conduct testing (production verification/reliability/user evaluation/air drop) on the improved weapon system and modify weapons based on test results. Compact Semi-Automatic Sniper System (CSASS): Completes Production Qualification Testing (PQT) as an entry criteria for the Limited User Test (LUT). Conducts operational assessments and evaluations with a LUT as well as airborne drop testing. Completes Scoring Conference activities prior to release of the Operational Test		1.259	4.464	0.600	-	0.600

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B. Accomplishments/Planned Programs (\$ in Millions)				FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
<p>Agency Milestone Assessment Report (OMAR). Completes provisioning activities, Core Logistics Assessment (CLA), Life Cycle Sustainment Plan (LCSP) and conducts Log Demo. Continues to develop all documentation and prepare for TC STD, Full Rate Production, and Full Material Release decisions in FY2019. The CSASS is a potential material solution for the Squad Designated Marksman Rifle (SDMR).</p> <p>Small Business Innovation Research (SBIR) Enhancements: Support Phase II Enhancement and/or initialization of Phase III SBIR activities that transferred from Program Element 0604601A S63 within the same Program Element.</p> <p>Weapon Upgrades and Accessories: Test, evaluate and analyze ongoing and new activities to enhance Crew Served Weapons.</p> <p>FY 2019 Base Plans: Transition of technologies from Program Element 0603827A S54: Increased Barrel Life/Replace Chrome: Will complete maturation of design, address residual issues found during previous prototype testing. Will complete refinement of drawing and specification package, build full length barrels for final qualification and safety confirmation testing. Will perform testing at a Government facility.</p> <p>M2 Lightweight Program - Will continue to investigate alternative materials (i.e. titanium) in order to lighten the Warfighter's load, to improve Soldier mobility, respond to vehicle weight restrictions, improve weapon parts life, increase durability and potentially increase performance. Manufacture lightweight titanium weapon parts, assemble improved parts into legacy weapons, conduct testing (production verification/reliability/user evaluation/air drop) on the improved weapon system and modify weapons based on test results.</p> <p>Small Business Innovation Research (SBIR) Enhancements: Will continue to support Phase II Enhancement and/or initialization of Phase III SBIR activities.</p> <p>Gunner Integrated Protection and Restraint System, Objective Gunner Protection Kit (GIPRS/OGPK): Will complete developmental verification testing and begin operational testing for the TOW Missile Objective Gunner Protection Kit (TOGPK) 2.0. Will begin work on technical publications and prepare for TOGPK 2.0 type classification.</p>								

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B. Accomplishments/Planned Programs (\$ in Millions)				FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Weapon Upgrades and Accessories: Will continue to test, evaluate and analyze ongoing and new activities to enhance Crew Served Weapons. FY 2018 to FY 2019 Increase/Decrease Statement: Decreased funding due to completion of both the M2 Lightweight Program and Compact Semi-Automatic Sniper System efforts completed in FY2018.								
Title: Ammunition Description: Improvement of Crew Served Weapons Ammunition FY 2018 Plans: Ammunition Upgrades: Test, evaluate and analyze the effect of current and new ammunition on Crew Served Weapons. Specific focus on alignment of requirements between crew served fire control and 40mm air burst munitions. Evaluates other M3/E1 MAAWs munitions such as the smoke and illuminating rounds currently used by SOCOM. FY 2019 Base Plans: Ammunition Upgrades: Will continue to test, evaluate and analyze the effect of current and new ammunition on Crew Served Weapons. Specific focus on alignment of requirements between crew served fire control and 40mm air burst munitions. FY 2018 to FY 2019 Increase/Decrease Statement: Decreased funding due to completed FY18 ammunition efforts.				0.650	0.226	0.100	-	0.100
Title: Combat Optics Description: Improvement of Combat Optics FY 2018 Plans: Mounted Machinegun Optic: Continues to finalize Test and Evaluation Master Plan (TEMP), Acquisition Strategy/Acquisition Plan, and Production Readiness Review (PRR) for program execution. Completes Procurement package, plans and develops Request for Proposals for down select. Award contract for initial source selection and down select. Develops Test Plan and conducts testing for first down select for further evaluation.				0.720	1.390	0.025	-	0.025

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Optic Upgrades: Continues engineering evaluations, verification and validation of weapon optics performance requirements. FY 2019 Base Plans: Mounted Machinegun Optic: Will work to achieve Full Material Release for the MMO. Will conduct Production Verification Tests and First Article Tests and Production Readiness Review (PRR) for program production execution. Will award contract for full rate production. Will prepare and conduct First Unit Equipped actions for the MMO. Optic Upgrades: Will continue engineering evaluations, verification and validation of weapon optics performance requirements. FY 2018 to FY 2019 Increase/Decrease Statement: Decreased funding due to the completion of the Mounted Machinegun Optic effort in R&D and transitioning to production in FY18.						
Title: Fire Control Description: Improvement of Crew Served Weapons fire control.		1.764	-	-	-	-
Title: Research and Analysis Description: Market Research and Cost Benefit Analysis FY 2018 Plans: Continues Market Research and Cost Benefit Analysis of new small arms weapon and/or enhancements for engineering and manufacturing development. FY 2019 Base Plans: Will continue Market Research and Cost Benefit Analysis of new small arms weapon and/or enhancements for engineering and manufacturing development.		0.100	0.100	0.100	-	0.100
Accomplishments/Planned Programs Subtotals		7.708	9.251	29.611	-	29.611

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army										Date: February 2018		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) EW4 / Crew Served Weapons Engineering Development				
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost	
• S54: Small Arms Improvement	11.649	6.851	7.687	-	7.687	10.566	16.108	19.243	15.284	0.000	87.388	
• S58: Soldier Enhancement Program	9.528	3.353	2.885	-	2.885	2.940	2.999	3.016	2.814	0.000	27.535	
• GZ1500: Sniper Rifles Modifications	1.963	1.488	2.747	-	2.747	0.958	1.932	1.890	1.926	Continuing	Continuing	
• GZ1290: M249 SAW Machine Gun MODS	1.179	3.339	3.924	-	3.924	4.487	3.414	-	-	Continuing	Continuing	
• GZ1300: M240 Medium Machine Gun MODS	1.784	4.577	6.940	0.007	6.947	10.315	6.635	5.358	3.390	Continuing	Continuing	
• GB3000: MK-19 Grenade Machine Gun MODS	4.959	2.000	1.684	-	1.684	1.718	6.708	11.700	14.417	Continuing	Continuing	
• GB4000: M2 50 Cal Machine Gun MODS	48.582	47.414	21.600	4.920	26.520	12.490	10.116	3.973	0.849	Continuing	Continuing	
• GC0925: Modifications Less Than \$5.0m (WOCV-WTCV)	3.157	2.219	5.577	-	5.577	5.089	3.386	3.158	3.150	Continuing	Continuing	
• GL3200: Items Less Than \$5.0m (WOCV-WTCV)	2.331	5.075	3.174	1.397	4.571	1.337	2.777	2.880	2.988	Continuing	Continuing	
• G13000: M240 Medium Machine Gun (7.62mm)	-	1.992	1.955	0.126	2.081	-	-	103.072	159.912	Continuing	Continuing	
• G01506: WTCV, G015060, Precision Sniper Rifle	-	-	0.000	-	0.000	9.417	13.382	15.363	16.558	Continuing	Continuing	
• G13101: MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL WEAPON SYSTEM	-	6.520	23.345	-	23.345	19.542	18.008	40.251	36.606	Continuing	Continuing	
Remarks												
In support of Small Arms Requirements, components or prototypes developed in Small Arms Improvement, Project S54, Program Element 0603827A, (Budget Activity 4) is transitioned to Crew Served Weapons Engineering Development, Project EW4, Program Element 0604601A, (Budget Activity 5) to conduct engineering and manufacturing development. Once the component, prototype or operational prototype achieves Milestone C and type classification the item transitions to small arms weapon production or modification program.												

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>	Project (Number/Name) <i>EW4 / Crew Served Weapons Engineering Development</i>
<u>D. Acquisition Strategy</u> Primary strategy is to mature and finalize design efforts, award Research, Development, Test and Evaluation (RDT&E) hardware contracts, and test and evaluate systems that result in type classification and follow-on production contract awards.		
<u>E. Performance Metrics</u> N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS						Project (Number/Name) EW4 / Crew Served Weapons Engineering Development			
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Allot	PM Soldier Weapons, : Picatinny Arsenal	-	0.200	Mar 2017	0.251		1.500	Mar 2019	-		1.500	Continuing	Continuing	Continuing
Travel	MIPR	PM Soldier Weapons, : Picatinny Arsenal	-	0.040	Mar 2017	0.049		0.075	Mar 2019	-		0.075	Continuing	Continuing	Continuing
Subtotal			-	0.240		0.300		1.575		-		1.575	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Fabrication	Various	Various : Multiple Contractors	-	0.200	Mar 2017	0.150		19.282	Mar 2019	-		19.282	Continuing	Continuing	Continuing
Hardware Development	MIPR	Army Research Development Engineers Centers : Multiple	-	0.074	Mar 2017	2.519		2.500	Mar 2019	-		2.500	Continuing	Continuing	Continuing
Subtotal			-	0.274		2.669		21.782		-		21.782	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering	MIPR	Army Research Development Engineering Centers : Multiple	-	3.174	Mar 2017	2.708		2.675	Mar 2019	-		2.675	Continuing	Continuing	Continuing
Logistics	MIPR	Tank & Automotive Command (TACOM), : Warren	-	0.269	Mar 2017	0.068		0.070	Mar 2019	-		0.070	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS						Project (Number/Name) EW4 / Crew Served Weapons Engineering Development			
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Human Research and Engineering	MIPR	Army Research Laboratory, : Aberdeen Proving Ground	-	0.269	Mar 2017	0.068		0.070	Mar 2019	-		0.070	Continuing	Continuing	Continuing
Subtotal			-	3.712		2.844		2.815		-		2.815	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Testing	MIPR	Army Developmental Test Command, : Aberdeen Proving Ground	-	1.365	Mar 2017	2.850		2.869	Mar 2019	-		2.869	Continuing	Continuing	Continuing
Operational Testing	MIPR	Army Test and Evaluation Command, : Aberdeen Proving Ground	-	1.848	Mar 2017	0.520		0.500	Mar 2019	-		0.500	Continuing	Continuing	Continuing
Validation Testing	MIPR	Army Test and Evaluation Centers, : Multiple	-	0.269	Mar 2017	0.068		0.070	Mar 2019	-		0.070	Continuing	Continuing	Continuing
Subtotal			-	3.482		3.438		3.439		-		3.439	Continuing	Continuing	N/A
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	7.708		9.251		29.611		-		29.611	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army			Date: February 2018		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS		Project (Number/Name) EW4 / Crew Served Weapons Engineering Development	

Event Name	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NEW WEAPONS																												
Next Generation Squad Automatic Rifle (NGSAR)																												
M3/M3E1 Multi-Role Anti-Armor Anti-Personnel Weapon System																												
Precision Sniper Rifle (PSR)																												
New Weapon Evaluations and Assessments																												
CREW SERVED WEAPON ENHANCEMENTS																												
M2 Lightweight Program																												
Gunner Integrated Protection and Restraint Systems (GIPRS/OC)																												
Increased Barrel Life																												
Compact Semi-Automatic Sniper System (CSASS)																												
Weapons Upgrades and Accessories																												
Small Business Innovation Research (SBIR) Enhancements																												
AMMUNITION																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army			Date: February 2018		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>		Project (Number/Name) <i>EW4 / Crew Served Weapons Engineering Development</i>	

Event Name	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
XM1112 Airburst Non-Lethal Munition (ANLM)																												
Ammunition Upgrades																												
COMBAT OPTICS																												
Mounted Machinegun Optic																												
Optic Upgrades																												
FIRE CONTROL																												
Small Arms Fire Control - Precision Program of Record																												
Fire Control Upgrades																												
RESEARCH AND ANALYSIS																												
Research and Analysis																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS	Project (Number/Name) EW4 / Crew Served Weapons Engineering Development	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NEW WEAPONS	1	2017	4	2023
Next Generation Squad Automatic Rifle (NGSAR)	1	2019	4	2023
M3/M3E1 Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS)	1	2017	4	2020
Precision Sniper Rifle (PSR)	1	2017	4	2020
New Weapon Evaluations and Assessments	1	2018	4	2023
CREW SERVED WEAPON ENHANCEMENTS	1	2017	4	2023
M2 Lightweight Program	1	2018	4	2019
Gunner Integrated Protection and Restraint Systems (GIPRS/OGPK)	1	2017	4	2023
Increased Barrel Life	1	2019	4	2020
Compact Semi-Automatic Sniper System (CSASS)	1	2017	4	2018
Weapons Upgrades and Accessories	1	2017	4	2023
Small Business Innovation Research (SBIR) Enhancements	1	2017	4	2018
AMMUNITION	1	2017	4	2023
XM1112 Airburst Non-Lethal Munition (ANLM)	1	2017	4	2017
Ammunition Upgrades	1	2017	4	2023
COMBAT OPTICS	1	2017	4	2023
Mounted Machinegun Optic	1	2017	4	2022
Optic Upgrades	1	2017	4	2023
FIRE CONTROL	1	2017	4	2017
Small Arms Fire Control - Precision Program of Record	1	2017	4	2017
Fire Control Upgrades	1	2017	4	2017
RESEARCH AND ANALYSIS	1	2017	4	2023

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS	Project (Number/Name) EW4 / Crew Served Weapons Engineering Development	

Events	Start		End	
	Quarter	Year	Quarter	Year
Research and Analysis	1	2017	4	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army										Date: February 2018		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) FF2 / Small Arms Fire Control			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
FF2: Small Arms Fire Control	-	0.000	20.117	20.201	-	20.201	21.463	10.163	11.254	4.967	0.000	88.165
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note												
Small Arms Fire Control (SAFC) was previously funded under Projects S63 and EW4, Program Element (PE) 0604601A Infantry Support Weapons, and transitioned to FF2 in FY2018 under the same PE.												
A. Mission Description and Budget Item Justification												
Small Arms Fire Control (SAFC) is a requirement for optimized fire control devices with improved Size Weight and Power (SWAP) to support Squad (S), Crew Served (CS) and Precision (P). SAFC shall increase the probability of hit and decrease time to engage across a range of small arms weapon systems, with a direct-view optic that allows for quicker and more accurate target detection and recognition. The SAFC shall utilize an open system of systems architecture comprised of modular components, to deliver to current ground forces the initial increased core capability followed by increasing increments of capability/enhancements over time as technology matures and evolves. Small Arms Fire Control will culminate in multiple configurations: a Small Arms Fire Control - Squad (SAFC-S), Small Arms Fire Control - Crew Served (SAFC-CS), and Small Arms Fire Control - Precision (SAFC-P). They may include technology such as variable magnification direct view (day) optics, atmospheric sensors, an overlaid digital display, weapon orientation sensor, range determination, ballistic computer, disturbed reticle, and networked lethality. There are also other associated fire control efforts being worked simultaneously to include Advanced Individual Handheld Binocular (AIHB), Advanced Fire Control with Precision Projectile Tracking, Next Generation Fire Control, and Small Arms Fire Control for 40mm Low Velocity.												
FY2019 RDT&E funding in the amount of \$20.201 million will continue the Engineering and Manufacturing Development (EMD) Phases for the two (2) Fire Control configurations (SAFC-CS and SAFC-P) and will support integration, manufacture, and testing of Next Generation Fire Control technologies. FY2019 funding will be focused on bid sample contract awards, down selection, design/prototyping, developmental and initial operational testing and evaluation. Other associated fire control efforts being worked simultaneously include, Advanced Individual Handheld Binocular (AIHB), Advanced Fire Control with Precision Projectile Tracking, and Small Arms Fire Control for 40mm Low Velocity.												
B. Accomplishments/Planned Programs (\$ in Millions)												
								FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Design, Develop and Fabricate								-	11.412	11.638	-	11.638
Description: Includes contract awards for the Engineering and Manufacturing Development of the three Fire Control configurations (SAFC-S, SAFC-CS and SAFC-P) and the Advanced Individual Handheld Binocular (AIHB).												
FY 2018 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army			Date: February 2018		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS		Project (Number/Name) FF2 / Small Arms Fire Control	
B. Accomplishments/Planned Programs (\$ in Millions)					
	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Multiple contract awards begins the development and integration of various Fire Control configurations and development of initial prototypes. Initial prototypes will be delivered, system functional reviews will be conducted, and a design alternation plan will be established. FY 2019 Base Plans: Will continue development and integration of various Fire Control configurations and transition squad variant, to conduct functional reviews and implement alternation plans for initial prototypes. Will award EMD Phase contracts. FY 2018 to FY 2019 Increase/Decrease Statement: Funded amount of contract increases for EMD contract award.					
Title: Engineering Support Description: Government engineering support at lab/center, providing oversight of design development, integration and contractor performance. FY 2018 Plans: Provides engineering support and oversight of design improvements and contractor performance. Participate in source selection activities and technical reviews. FY 2019 Base Plans: Will continue to provide systems engineering support and oversight of design improvements and contractor performance. Continue participation in source selection activities and technical reviews. Will provide oversight of development and operational test activities, preliminary and critical design reviews. FY 2018 to FY 2019 Increase/Decrease Statement: Additional funds are required for preliminary and critical design reviews in FY2019.	-	3.530	3.575	-	3.575
Title: Test and Evaluation Description: Government testing and evaluation of Commercial Off The Shelf / Non-Developmental Item (COTS/NDI) items, prototypes, articles and improvements. FY 2018 Plans: Develops test and evaluation criteria and documentation, test bid samples, test and evaluate improvements of initial prototypes. Prototype systems will be tested both for technical capability as well as user evaluation.	-	3.894	3.880	-	3.880

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army									Date: February 2018				
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) FF2 / Small Arms Fire Control					
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Assess and evaluate incorporating existing target acquisition/fire control component technologies into binoculars. Recommendations for system improvement and improved acceptability will be generated. FY 2019 Base Plans: Will complete bid sample testing and conduct developmental and operational test activities for small arms fire control variants. Will conduct preliminary and critical design reviews. Will continue to assess and evaluate incorporating existing target acquisition/fire control component technologies into binoculars. FY 2018 to FY 2019 Increase/Decrease Statement: Slight decrease in funds as one variant completes test and evaluation activities in early FY2019.													
Title: Program Management Description: Program management office, providing oversight of contract actions, engineering support and test activities. FY 2018 Plans: Provide program oversight of design, development, integration and testing, to include contract actions, engineering support and test activities throughout the fiscal year. FY 2019 Base Plans: Provides Program Management (PM) non-labor operations. FY 2018 to FY 2019 Increase/Decrease Statement: PM labor will be funded with OMA dollars in FY2019.									-	1.281	1.108	-	1.108
Accomplishments/Planned Programs Subtotals									-	20.117	20.201	-	20.201
C. Other Program Funding Summary (\$ in Millions)													
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost		
• S54: Small Arms Improvement	11.649	6.851	7.687	-	7.687	10.566	16.108	19.243	15.284	0.000	87.388		
• G17202: CREW SERVED SA-FC	-	-	0.000	-	0.000	-	24.398	37.996	61.448	Continuing	Continuing		
• G17203: Precision SA-FC	-	-	7.929	-	7.929	8.497	17.936	31.599	33.326	Continuing	Continuing		
Remarks													
Small Arms Fire Control was previously funded on Program Element 0604601A Infantry Support Weapons, under Projects S63 and EW4.													

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>	Project (Number/Name) FF2 / <i>Small Arms Fire Control</i>
<u>D. Acquisition Strategy</u> <p>The Small Arms Fire Control (SAFC) program will use an incremental developmental acquisition strategy.</p> <p>The Small Arms Fire Control - Precision (SAFC-P) shall award up to two (2) Engineering and Manufacturing Development contract in FY2018. Total Approved Acquisition Objective (AAO) for the SAFC-P is 6,004 systems.</p> <p>The Small Arms Fire Control - Crew Served (SAFC-CS) shall award up to three (3) Engineering and Manufacturing Development contracts in late FY2018, with a follow-on contract option to fully develop the system. Total Approved Acquisition Objective (AAO) for the SAFC-CS is 20,478 systems.</p> <p>The Small Arms Fire Control - Squad (SAFC-S) shall award up to two (2) Engineering and Manufacturing Development contracts in late FY2019 to early FY2020 carrying both systems through Critical Design Review. Iterative prototyping will be used to gather both technical and user feedback, and continuous technical improvements will be made on the system design. Based on test data and user feedback, a single vendor will be down-selected for an LRIP production option award in 4QFY2020 followed by FRP FY2021. Total Approved Acquisition Objective (AAO) for the SAFC-S is 48,095 systems.</p> <p>Additional Small Arms Fire Control Projects: Other associated Fire Controls will be tested and evaluated simultaneously.</p> <u>E. Performance Metrics</u> <p>N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) FF2 / Small Arms Fire Control					
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering & Manufacturing Development Contract - Precision Fire Control	C/FFP	TBD : TBD	-	-		5.193	Jan 2018	6.236	Dec 2018	-		6.236	Continuing	Continuing	-
Engineering & Manufacturing Development Contract #1 - Crew Served Fire Control	C/FFP	TBD : TBD	-	-		0.500	Dec 2017	0.600	Nov 2018	-		0.600	Continuing	Continuing	-
Engineering & Manufacturing Development Contract #2 - Crew Served Fire Control	C/FFP	TBD : TBD	-	-		0.500	Dec 2017	0.600	Nov 2018	-		0.600	Continuing	Continuing	-
Engineering & Manufacturing Development Contract #3 - Other	C/FFP	TBD : TBD	-	-		3.500	Mar 2018	3.202	Feb 2019	-		3.202	Continuing	Continuing	-
Engineering & Manufacturing Development Contract #4- Squad Fire Control	C/FFP	TBD : TBD	-	-		-		1.000	Aug 2019	-		1.000	Continuing	Continuing	-
Subtotal			-	-		9.693		11.638		-		11.638	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	MIPR	US Army Armament Research, Development and Engineering Center (ARDEC) : Picatinny Arsenal, NJ	-	-		3.530	Oct 2017	3.575	Oct 2018	-		3.575	Continuing	Continuing	-
Program Management (Non-Labor)	Allot	Project Manager Soldier Weapons	-	-		1.500	Oct 2017	0.558	Oct 2018	-		0.558	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS						Project (Number/Name) FF2 / Small Arms Fire Control			
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		(PMSW) /Non-Labor : Picatinny Arsenal, NJ													
Contractor Support	C/FFP	TBD : TBD	-	-		1.500	Oct 2017	0.400	Nov 2018	-		0.400	Continuing	Continuing	-
Logistical Management	MIPR	US Army Tank & Automotive Command (TACOM) : Warren, MI	-	-		-		0.150	Dec 2018	-		0.150	Continuing	Continuing	-
Subtotal			-	-		6.530		4.683		-		4.683	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	MIPR	US Army Test and Evaluation Command (ATEC) : Aberdeen Proving Ground, MD	-	-		1.419	Jan 2018	1.610	Nov 2018	-		1.610	Continuing	Continuing	-
Test and Evaluation	MIPR	US Army Research Laboratory : Aberdeen Proving Ground, MD	-	-		0.850	Nov 2017	0.770	Jan 2019	-		0.770	Continuing	Continuing	-
Test and Evaluation	MIPR	Maneuver Battle Lab, US Army Maneuver Center of Excellence : FT Benning, GA	-	-		0.800	Oct 2017	0.700	Dec 2018	-		0.700	Continuing	Continuing	-
Test and Evaluation	MIPR	White Sands Missile Range : White Sands Missile Range, NM	-	-		0.825	Nov 2017	0.800	Jan 2019	-		0.800	Continuing	Continuing	-
Subtotal			-	-		3.894		3.880		-		3.880	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army										Date: February 2018			
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>					Project (Number/Name) FF2 / <i>Small Arms Fire Control</i>			
	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		20.117		20.201		-		20.201	Continuing	Continuing	N/A
Remarks													

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army			Date: February 2018		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>		Project (Number/Name) FF2 / <i>Small Arms Fire Control</i>	

Event Name	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Engineering & Manufacturing Development - Small Arms Fire Control - Precision																												
Engineering & Manufacturing Development - Small Arms Fire Control - Crew Served																												
Engineering & Manufacturing Development - Small Arms Fire Control - Squad																												
Additional Small Arms Fire Control Projects																												
Engineering Support																												
Test and Evaluation																												
Program Management (labor & non-labor)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>	Project (Number/Name) FF2 / <i>Small Arms Fire Control</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Engineering & Manufacturing Development - Small Arms Fire Control - Precision	1	2018	2	2020
Engineering & Manufacturing Development - Small Arms Fire Control - Crew Served	2	2018	3	2020
Engineering & Manufacturing Development - Small Arms Fire Control - Squad	4	2019	2	2021
Additional Small Arms Fire Control Projects	1	2018	4	2023
Engineering Support	1	2018	4	2023
Test and Evaluation	1	2018	4	2023
Program Management (labor & non-labor)	1	2018	4	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army										Date: February 2018		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) FI2 / Lightweight 30mm Cannon			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
FI2: <i>Lightweight 30mm Cannon</i>	-	0.000	5.500	0.000	-	0.000	1.384	0.000	0.000	0.000	0.000	6.884
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

In support of an Army directed requirement (reference DAPR-ZA Memorandum, dated 5 July 2016) to provide an increased lethality modification to the Joint Light Tactical Vehicle (JLTV), to serve as the Infantry Brigade Combat Team (IBCT) light reconnaissance vehicle, an upgraded medium caliber weapon will be developed, tested and evaluated for integration into a modified remote weapon station.

The XM914 is an upgraded and modified version of the M230 cannon currently equipped on the AH-64 Apache advanced attack helicopter. The XM914 is a link fed, externally powered and electrically primed 30mm chain gun, capable of firing two hundred rounds per minute. The gun incorporates an anti-hangfire system and an extended barrel for enhanced muzzle velocity. The XM914 provides significant lethality improvements over the current M2 .50 caliber machine gun and MK19 grenade machine gun and provides the capability required for Soldiers in a combat environment to engage enemy personnel and light armored targets.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Contractor Design and Prototype Fabrication	-	3.600	-	-	-
Description: Includes contractor design, development and prototype fabrication for engineering and manufacturing development of the XM914 30mm autocannon.					
FY 2018 Plans: Contractor begins work on the design and development effort for the XM914 30mm autocannon. Initial prototypes of the weapon and test hardware were purchased to conduct safety and limited reliability testing.					
FY 2018 to FY 2019 Increase/Decrease Statement: Decrease in funding as weapon prototypes are delivered.					
Title: Engineering Support	-	1.150	-	-	-
Description: Government engineering support at lab/center, providing design, limited testing and oversight of development and contractor performance.					
FY 2018 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army										Date: February 2018		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) FI2 / Lightweight 30mm Cannon				
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Provides design and development input, oversight of contractor performance, and participation in technical reviews. FY 2018 to FY 2019 Increase/Decrease Statement: Decrease in funding as engineering support ends.												
Title: Test and Evaluation Description: Government testing and evaluation of weapon prototype, articles and system improvements. FY 2018 Plans: Conducts initial testing of prototype weapons. Develop test and evaluation plans, criteria and documentation. Generate system improvement recommendations. FY 2018 to FY 2019 Increase/Decrease Statement: Decrease in funding as test and evaluation ends.								-	0.500	-	-	-
Title: Program Management Description: Program management office provides oversight of contract actions, engineering support and test activities. FY 2018 Plans: Provides program oversight of design, development, integration and testing, to include contract actions, engineering support and test activities throughout the fiscal year. FY 2018 to FY 2019 Increase/Decrease Statement: Program management labor costs transition to the Operations & Maintenance, Army (OMA) account in FY2019.								-	0.250	-	-	-
Accomplishments/Planned Programs Subtotals								-	5.500	-	-	-
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost	
• G13800: GUN AUTOMATIC 30MM M230	-	-	7.434	-	7.434	19.825	9.913	-	-	0.000	37.172	
• G04700: Common Remotely Operated Weapons Station	25.164	0.750	35.968	3.378	39.346	19.825	24.560	-	-	Continuing	Continuing	

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army										Date: February 2018	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) FI2 / Lightweight 30mm Cannon			
C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2019</u>	<u>FY 2019</u>	<u>FY 2019</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>Complete</u>	<u>Total Cost</u>
• S64: Common Remotely Operated Wpn Sys (CROWS)	11.548	22.500	0.000	-	0.000	-	-	-	-	0.000	34.048
Remarks											
D. Acquisition Strategy											
<p>The XM914 is currently considered a non-standard weapon that is being sold commercially to foreign customers by the vendor. As a modified version of the M230 30mm chain gun for the AH-64 Apache advanced attack helicopter, the XM914 requires safety confirmation/safety release and weapon qualification for vehicle mounted platforms. In order to meet the Urgent Materiel Release (UMR) requirement of nine (9) systems by FY19 (and the remaining 243 systems to follow), a sole source contract based on urgency will be pursued for a period of performance of one (1) year. A long term Indefinite Delivery/Indefinite Quantity (IDIQ) type contract will be pursued for the year to follow.</p> <p>The program supports new and emerging urgent requirements for the Joint Light Tactical Vehicle Directed Requirement and will support integration with the Remote Weapon Station on the vehicle or other platforms.</p>											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS						Project (Number/Name) FI2 / Lightweight 30mm Cannon			
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	PM Soldier Weapons : Picatinny Arsenal, NJ	-	-		0.250	Oct 2017	-		-		-	Continuing	Continuing	Continuing
Subtotal			-	-		0.250		-		-		-	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Design and Prototype Fabrication	SS/FFP	Orbital ATK : Dulles, VA	-	-		3.600	Nov 2017	-		-		-	Continuing	Continuing	Continuing
Subtotal			-	-		3.600		-		-		-	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	MIPR	US Army Armament Research, Development and Engineering Center (ARDEC) : Picatinny Arsenal, NJ	-	-		1.150	Oct 2017	-		-		-	Continuing	Continuing	Continuing
Subtotal			-	-		1.150		-		-		-	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	MIPR	Army Test and Evaluation Command (ATEC) :	-	-		0.500	Jan 2018	-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>				Project (Number/Name) FI2 / <i>Lightweight 30mm Cannon</i>				

Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
		Aberdeen Proving Ground, MD														
Subtotal			-	-		0.500		-		-		-		Continuing	Continuing	N/A

	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-	5.500	-	-	-	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army																Date: February 2018																					
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS										Project (Number/Name) FI2 / Lightweight 30mm Cannon																	
Event Name										FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
										1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Contractor Design and Prototype Fabrication																																					
Engineering Support																																					
Test and Evaluation																																					
Program Management																																					

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>	Project (Number/Name) FI2 / <i>Lightweight 30mm Cannon</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Contractor Design and Prototype Fabrication	1	2018	4	2018
Engineering Support	1	2018	4	2018
Test and Evaluation	1	2018	4	2018
Program Management	1	2018	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army										Date: February 2018		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) S58 / Soldier Enhancement Program			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
S58: Soldier Enhancement Program	-	9.528	3.353	2.885	-	2.885	2.940	2.999	3.016	2.814	0.000	27.535
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Description: The Soldier Enhancement Program (SEP) was established in the Fiscal Year 1990 National Defense Authorization Act. SEP provides an innovative approach that includes procurement and evaluation of Commercial Off the Shelf (COTS)/Non Developmental Item (NDI)/Government Off The Shelf (GOTS) items that have the potential to enhance an Army Infantryman and Soldiers' ability to execute their combat mission. SEP provides significant savings and acceleration in the evaluation of items. The SEP program is managed jointly by Program Executive Office (PEO) Soldier and the U.S. Army Training and Doctrine Command-Maneuver Center of Excellence. SEP suggestions are submitted by individual Soldiers, Field Commanders, commercial manufacturers, and others via the PEO Soldier SEP website. Viable suggestions are vetted by a Council of Colonels (CoC) and validated as SEP initiatives by Department of the Army, Deputy Chief of Staff, G8, Force Development. A limited number of validated SEP initiatives are procured and evaluated for feasibility and suitability. Based on the evaluation findings, the SEP CoC provides one or more of the following courses of action: (1) no further action required, (2) item did not meet objectives, (3) inform deliberate or urgent/emerging requirements generation, (4) initiate a new Program of Record (POR), (5) improve an existing POR, (6) transition to the Rapid Equipping Force or (7) add to the Rapid Fielding Initiative list.

Justification: FY19 RDT&E funding supports SEP evaluations and documentation of results.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Soldier Enhancement Program (SEP) Evaluations	9.007	2.821	2.373	-	2.373
Description: Procured and evaluated COTS/GOTS/NDI items that have the potential to enhance Soldier combat effectiveness.					
FY 2018 Plans: Funding will support evaluation of approximately 25 initiatives. Product evaluations will include safety testing, collection, and analysis of user feedback/results and documentation of results.					
FY 2019 Base Plans: Funding will support evaluation of approximately 20 initiatives. Product evaluations will include safety testing, collection, and analysis of user feedback/results and documentation of results.					
FY 2018 to FY 2019 Increase/Decrease Statement:					

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army				Date: February 2018	
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS		Project (Number/Name) S58 / Soldier Enhancement Program	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
FY18 to FY19 funding decrease due to reduced number of anticipated initiatives scheduled for evaluation.					
Title: Systems Engineering and Program Management. Description: Systems Engineering and Program Management. FY 2018 Plans: Upon conclusion of soldier evaluations, the SEP team will receive and review incoming proposals. The team will coordinate with industry and TRADOC to ensure submitted proposals satisfy Army needs. Will continue to evaluate SEP initiatives and provide recommendations. FY 2019 Base Plans: Upon conclusion of the evaluations, the SEP team will receive and review incoming proposals. The team will coordinate with industry and TRADOC to ensure submitted proposals satisfy Army needs. Will continue to evaluate SEP initiatives and provide recommendations. FY 2018 to FY 2019 Increase/Decrease Statement: FY18 to FY19 funding increase due to level of support required.	0.521	0.532	0.512	-	0.512
Accomplishments/Planned Programs Subtotals	9.528	3.353	2.885	-	2.885

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019 Base</u>	<u>FY 2019 OCO</u>	<u>FY 2019 Total</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• MA6800: Soldier Enhancement	2.112	1.095	1.103	-	1.103	1.125	1.147	1.161	1.184	0.000	8.927
• E99105: Soldier Enhancement Program Ammo	0.341	0.248	0.253	-	0.253	0.260	0.267	0.272	0.277	0.000	1.918
• GC0076: Small Arms Equipment (Soldier Enh Prog)	3.155	1.573	1.640	-	1.640	1.673	1.706	1.738	1.738	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
SEP focuses on COTS/GOTS/NDI initiatives submitted by Soldiers and industry. SEP proposals are reviewed and approved semiannually. Procurement funds SEP COTS/GOTS/NDI items for evaluation. Research, Development, Test and Evaluation is used to conduct product evaluations which includes safety testing, data collection, analysis of Soldier feedback/results and documentation of results.											

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS	Project (Number/Name) S58 / Soldier Enhancement Program
E. Performance Metrics NA		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) S58 / Soldier Enhancement Program					
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	MIPR	PEO Soldier : Ft. Belvoir, VA	13.256	0.521	Mar 2017	0.532	Dec 2017	0.512	Dec 2018	-		0.512	Continuing	Continuing	Continuing
Subtotal			13.256	0.521		0.532		0.512		-		0.512	Continuing	Continuing	N/A
Remarks															
Systems Engineering and Program Management includes engineering support, conducting technical evaluations, market research and program reviews.															
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	MIPR	Various : Various	39.573	-		-		-		-		-	0.000	39.573	Continuing
Subtotal			39.573	-		-		-		-		-	0.000	39.573	N/A
Remarks															
Candidates for the Soldier Enhancement Program are received, reviewed, and approved semi-annually. Contractual efforts are focused on procuring prototypes for testing.															
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	MIPR	PEO Soldier : Ft. Belvoir, VA	6.424	-		-		-		-		-	0.000	6.424	-
Subtotal			6.424	-		-		-		-		-	0.000	6.424	N/A
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	MIPR	Various : Various	34.353	9.007	Aug 2017	2.821		2.373		-		2.373	Continuing	Continuing	Continuing
Subtotal			34.353	9.007		2.821		2.373		-		2.373	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>				Project (Number/Name) <i>S58 / Soldier Enhancement Program</i>				

Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks Testing costs vary annually depending on number and type of items being evaluated.															
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			93.606	9.528		3.353		2.885		-		2.885	Continuing	Continuing	N/A
Remarks															

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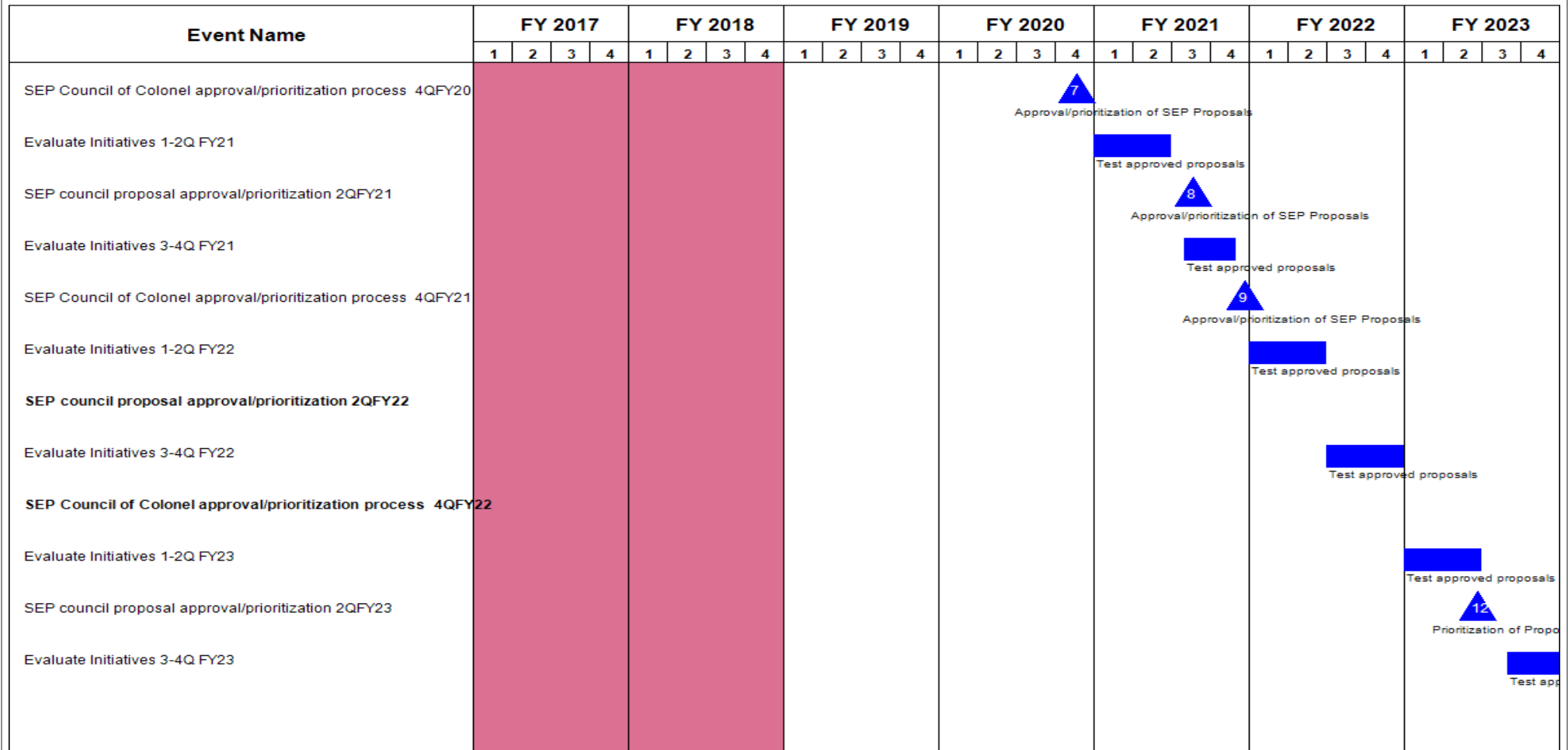
Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army **Date:** February 2018

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>	Project (Number/Name) <i>S58 / Soldier Enhancement Program</i>
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Event Name	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Evaluate Initiatives 1-2Q FY17																												
SEP Council of Colonel approval/prioritization process 2Q FY17																												
Evaluate Initiatives 3-4Q FY17																												
SEP Council of Colonel approval/prioritization process 4QFY17																												
Evaluate Initiatives 1-2Q FY18																												
SEP Council of Colonel approval/prioritization process 2Q FY18																												
Evaluate Initiatives 3-4Q FY18																												
SEP Council of Colonel approval/prioritization process 4QFY18																												
Evaluate Initiatives 1-2Q FY19																												
SEP Council of Colonel approval/prioritization process 2Q FY19																												
Evaluate Initiatives 3-4Q FY19																												
SEP Council of Colonel approval/prioritization process 4QFY19																												
Evaluate Initiatives 1-2Q FY20																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army			Date: February 2018		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>		Project (Number/Name) <i>S58 / Soldier Enhancement Program</i>	



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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>	Project (Number/Name) <i>S58 / Soldier Enhancement Program</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Evaluate Initiatives 1-2Q FY17	1	2017	2	2017
SEP Council of Colonel approval/prioritization process 2Q FY17	2	2017	2	2017
Evaluate Initiatives 3-4Q FY17	3	2017	4	2017
SEP Council of Colonel approval/prioritization process 4QFY17	4	2017	4	2017
Evaluate Initiatives 1-2Q FY18	1	2018	2	2018
SEP Council of Colonel approval/prioritization process 2Q FY18	2	2018	2	2018
Evaluate Initiatives 3-4Q FY18	3	2018	4	2018
SEP Council of Colonel approval/prioritization process 4QFY18	4	2018	4	2018
Evaluate Initiatives 1-2Q FY19	1	2019	2	2019
SEP Council of Colonel approval/prioritization process 2Q FY19	2	2019	2	2019
Evaluate Initiatives 3-4Q FY19	3	2019	4	2019
SEP Council of Colonel approval/prioritization process 4QFY19	4	2019	4	2019
Evaluate Initiatives 1-2Q FY20	1	2020	2	2020
SEP Council of Colonel approval/prioritization process 4QFY20	4	2020	4	2020
Evaluate Initiatives 1-2Q FY21	1	2021	2	2021
SEP council proposal approval/prioritization 2QFY21	3	2021	3	2021
Evaluate Initiatives 3-4Q FY21	3	2021	4	2021
SEP Council of Colonel approval/prioritization process 4QFY21	4	2021	4	2021
Evaluate Initiatives 1-2Q FY22	1	2022	2	2022
SEP council proposal approval/prioritization 2QFY22	2	2022	2	2022
Evaluate Initiatives 3-4Q FY22	3	2022	4	2022
SEP Council of Colonel approval/prioritization process 4QFY22	4	2022	4	2022

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army			Date: February 2018	
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS		Project (Number/Name) S58 / Soldier Enhancement Program
		Start		End
Events		Quarter	Year	Quarter Year
Evaluate Initiatives 1-2Q FY23		1	2023	2 2023
SEP council proposal approval/prioritization 2QFY23		2	2023	2 2023
Evaluate Initiatives 3-4Q FY23		3	2023	4 2023

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army										Date: February 2018		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) S60 / Clothing & Equipment			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
S60: Clothing & Equipment	-	8.401	7.022	5.355	-	5.355	6.453	6.724	5.015	4.850	0.000	43.820
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
This funding supports engineering and manufacturing development tasks related to individual clothing and equipment with the goal of enhancing the survivability, mobility and quality of life of the individual Soldier. It funds system integration and formal Developmental Testing/Operational Testing of preproduction and production representative systems leveraging advancements in materials, fabrication techniques, moisture management, flame resistant, antimicrobial treatments, insect protection, extreme environmental protection and chemical/biological protection and camouflage, to include evaluation, test, and conduct of Soldier evaluations of Organizational Clothing and Individual Equipment appropriate for use in jungle/tropical and Arctic environments. Goal is to increase the capabilities and durability of tactical and non-tactical clothing and individual equipment. Includes integration and interface on the Soldier system.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Soldier Uniforms and Clothing								6.666	5.820	4.326	-	4.326
Description: Develop and provide superior and sustainable integrated clothing for the Soldier in a rapidly changing global environment.												
FY 2018 Plans: Uniform Clothing and Environmental Clothing System. Complete user evaluation for Flame Resistant Fuel Handlers Coveralls to support material change proposal. Complete development of Chief of Staff of the Army (CSA) initiated Army Business Uniform (Pinks & Greens). Initiate modifications to achieve final designs on the Improved Hot Weather Army Combat Uniform. Initiate final design on Variant 2 of the Jungle Combat Boot. Conduct limited user evaluation on uniforms with improved protection against insects and flame while increasing moisture management, signature management, breathability, and durability for tactical clothing transitioning from S-53. Provide evaluation support of commercial offerings against the military product description for the athletic shoe in support of the Department of Defense. Conduct human factors evaluation on the Maternity uniform to support full rate production decision.												
Complete NDAA-directed testing to develop Purchase Description for Berry Amendment-compliant clothing bag running shoe. FR Uniforms: Conduct user evaluation on uniforms made from improved FR materials.												

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army				Date: February 2018		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS		Project (Number/Name) S60 / Clothing & Equipment		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Plans to continue to refine designs and incorporate alternate materials into clothing bag items.						
FY 2019 Base Plans: Conduct user evaluation on environmental protective handwear for use in Arctic environments. Continue modifications to support improved protection against insects and flame while increasing moisture management, signature management, breathability, and durability for tactical clothing. Continue to provide evaluation support of commercial offerings against the military product description for the athletic shoe in support of the Department of Defense and Congressional direction. Conduct flame testing on all FR clothing items using testing methodology transitioning from Science and Technology (S&T) community.						
FY 2018 to FY 2019 Increase/Decrease Statement: Funding decrease in Clothing and Equipment portfolio is due to anticipated reduced requirements in FY18 and FY19.						
Title: Individual Equipment Description: Develop and provide superior and sustainable integrated individual equipment for the Soldier in a rapidly changing global environment.		1.735	1.202	1.029	-	1.029
FY 2018 Plans: Nuclear, Biological and Chemical (NBC)/Load Carriage/Hydration: Continue live chemical agent testing for the Multi-Purpose Hydration System (MPHS) to increase operational life to reach 365 days once placed into service in an operational environment. Also, conduct second year of five year live agent test protocol to extend shelf-life of hydration systems. Continue limited user evaluation and testing of tactical holster to be fielded with the new Modular Handgun System. Conduct MOLLE 4000 large ruck user evaluation to include safety confirmation jumps to satisfy Special Operations Test Directorate.						
FY 2019 Base Plans: Procure assets and conduct limited user evaluation on government designed Modular Handgun System Holster. Test methodology provides three dimensional anthropometrically correct instrumented hand and head forms for testing in flame environment. Perform safe to fly testing on Advanced Tactical Assault Panel. Test increased capacity capability for IWTD.						
FY 2018 to FY 2019 Increase/Decrease Statement:						

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army							Date: February 2018				
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS			Project (Number/Name) S60 / Clothing & Equipment				
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Funding decrease in Clothing and Equipment portfolio is due to anticipated reduced requirements in FY18 and FY19.											
Accomplishments/Planned Programs Subtotals							8.401	7.022	5.355	-	5.355
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• S53: RDTE, 0603827.S53, Clothing and Equipment	3.493	2.612	1.845	-	1.845	2.495	1.831	2.445	4.743	Continuing	Continuing
• Central Funding and Fielding: OMA, 121017, Central Funding and Fielding	49.604	-	0.000	-	0.000	-	-	-	-	Continuing	Continuing
• Force Readiness Operations Support: OMA, 121018, Force Readiness Operations Support	-	79.417	38.000	-	38.000	39.800	39.100	40.113	40.119	0.000	276.549
Remarks											
D. Acquisition Strategy											
Acquisition strategies for these programs vary in methods, and range from: 1) Material Change programs that result in engineering changes to existing systems to; 2) Traditional development programs that include an Engineering and Manufacturing Development phase ranging in duration from 12 to 48 months, depending on the level of complexity and testing required.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS						Project (Number/Name) S60 / Clothing & Equipment			
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Allot	PM SCIE : Ft Belvoir	9.079	0.623		0.703		0.695		-		0.695	Continuing	Continuing	Continuing
Subtotal			9.079	0.623		0.703		0.695		-		0.695	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	Various	NSRDEC : Natick, MA	15.795	0.490		0.500		0.495		-		0.495	Continuing	Continuing	Continuing
Development Contracts	Various	Various : Various	43.633	2.500		2.745		2.187		-		2.187	Continuing	Continuing	Continuing
Subtotal			59.428	2.990		3.245		2.682		-		2.682	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Misc Support Costs	Various	Various : Various	16.086	0.400		0.400		0.400		-		0.400	Continuing	Continuing	Continuing
Subtotal			16.086	0.400		0.400		0.400		-		0.400	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Testing	MIPR	Various : Various	21.139	4.388		2.674		1.578		-		1.578	Continuing	Continuing	Continuing
Subtotal			21.139	4.388		2.674		1.578		-		1.578	Continuing	Continuing	N/A
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			105.732	8.401		7.022		5.355		-		5.355	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army							Date: February 2018			
Appropriation/Budget Activity 2040 / 5			R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS			Project (Number/Name) S60 / Clothing & Equipment				
	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army **Date:** February 2018

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>	Project (Number/Name) S60 / <i>Clothing & Equipment</i>
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Event Name	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
UNIFORM CLOTHING																												
Continue Fabric & FR Upgrades																												
FR Next Gen Materials Testing																												
Clothing Bag Upgrades and Evaluations																												
Jungle Ensemble Transition to Production																												
Cold/Extreme Cold Weather System MS C																												
Cold/Extreme Cold Weather Boot MS C																												
Modular Cold/Extreme Glove Sys MS C																												
EPS Upgrades																												
Military Free Fall Environment Equipment Milestone C																												
INDIVIDUAL EQUIPMENT																												
IWTD MS C																												
Poncho Liner/Field Tarp Testing																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army			Date: February 2018		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>		Project (Number/Name) S60 / <i>Clothing & Equipment</i>	

Event Name	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
On the Move Hydration Operational Life Testing																												
Tactical Holster Testing																												
Increased Capacity IWTD																												
Increased on the move Hydration Capacity																												
Ghillie Suit MS C																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>	Project (Number/Name) <i>S60 / Clothing & Equipment</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
UNIFORM CLOTHING	1	2010	4	2022
Continue Fabric & FR Upgrades	3	2009	4	2018
FR Next Gen Materials Testing	2	2021	4	2022
Clothing Bag Upgrades and Evaluations	1	2012	4	2018
Jungle Ensemble Transition to Production	2	2018	2	2018
Cold/Extreme Cold Weather System MS C	4	2023	4	2023
Cold/Extreme Cold Weather Boot MS C	1	2021	1	2021
Modular Cold/Extreme Glove Sys MS C	1	2020	1	2020
EPS Upgrades	3	2021	3	2023
Military Free Fall Environment Equipment Milestone C	1	2023	1	2023
INDIVIDUAL EQUIPMENT	2	2008	4	2022
IWTD MS C	4	2017	4	2017
Poncho Liner/Field Tarp Testing	2	2016	1	2017
On the Move Hydration Operational Life Testing	2	2017	4	2018
Tactical Holster Testing	2	2017	1	2018
Increased Capacity IWTD	1	2019	1	2020
Increased on the move Hydration Capacity	1	2019	1	2020
Ghillie Suit MS C	1	2019	1	2019

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army										Date: February 2018		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) S61 / Acis Engineering Development			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
S61: Acis Engineering Development	-	3.726	4.011	3.612	-	3.612	2.990	2.866	2.926	2.969	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project conducts Engineering and Manufacturing Development (EMD) for the Air Soldier System (Air SS). The Air SS is Army aircrew survival and mission equipment that improves safety, survivability, and human performance. The Air SS Capability Development Document (CDD) addresses capability gaps identified during sustained combat operations in Iraq and Afghanistan including inadequate crew station compatibility caused by equipment bulk, aircraft mishaps as a result of limited Situational Awareness (SA), and lack of functionally integrated aircrew mission and survival equipment. Air SS delivers reduced bulk and weight of survival equipment; improved crew station compatibility; and improved pilot SA and safety. The Air SS provides enhanced terrain, threat, and obstacle avoidance information; improved heads-up display (HUD) technologies that increase the aviator's SA; the capability to perform extended missions in extreme environmental and chemical/biological threat conditions; the capability to digitally replace paper-based DoD Flight Information Publications (Electronic Flight Bag); and develops and tests a modernized replacement for the Air Warrior survival vest that integrates with Soldier Protection System body armor (Aircrew Combat Ensemble). This project also funds the development and test of deferred CDD capabilities including improved laser eye protection and tactile cueing that enhances aviator SA. This program does not duplicate any aircraft platform program efforts. Includes integration and interface of products on Soldiers.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Aircrew Integrated Systems (ACIS) Engineering Development	3.726	4.011	3.612	-	3.612
Description: Development, Integration, evaluation, testing, and qualification of Air Soldier System multi-phased capabilities as technologies mature.					
FY 2018 Plans: FY 2018 Plans: Conduct Operational Test of the Air SS in the UH-60L and integration, qualification, and operational test of the Electronic Flight Bag, and continue integration, test, and qualification of the Aircrew Combat Ensemble.					
FY 2019 Base Plans: Continue Aircrew Combat Ensemble and Electronic Flight Bag Developmental Test and Operational Test as part of the developmental effort for the Air Soldier System Pre-planned Product Improvements Phase.					
FY 2018 to FY 2019 Increase/Decrease Statement:					

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army								Date: February 2018				
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) S61 / Acis Engineering Development				
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Decrease in FY 2019 from FY 2018 is due to planned completion of IOT&E in FY 2018.												
Accomplishments/Planned Programs Subtotals								3.726	4.011	3.612	-	3.612
C. Other Program Funding Summary (\$ in Millions)												
<u>Line Item</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019 Base</u>	<u>FY 2019 OCO</u>	<u>FY 2019 Total</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>Cost To Complete</u>	<u>Total Cost</u>	
• AZ3110: Aircraft Procurement, Army SSN AZ3110 - ACIS	30.297	47.066	27.483	-	27.483	25.423	23.353	32.381	35.104	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
Engineering and Manufacturing Development efforts for the Air SS program include development, integration, test, and airworthiness qualification of aviator flight display symbology technologies that will increase crew member situational awareness, and aircrew protective and survival equipment that reduces bulk and weight and improves crew station compatibility and mission effectiveness. Air SS includes improvements to the current flight helmet; improvements to the survival gear carriage system; lightweight body armor; environmental protective clothing and personal survival equipment; and a day/night helmet-mounted flight symbology display for UH-60 and CH-47 aviators. The Air SS P3I phase includes the development and qualification of the EFB, a digital Army aviation replacement for paper-based DoD Flight Information Publications, and the Aircrew Combat Ensemble (ACE), a replacement for the current Air Warrior survival vest that will further reduce weight and bulk, accommodate migration to the Army's new Soldier Protection System (SPS) modular ballistic protection system, and enhance compatibility and stowage/interface provisions for current and future clothing and individual survival equipment. P3I efforts also continue to develop deferred capabilities as defined within the Capability Development Document (CDD) to include tactile Situational Awareness enhancements and enhanced laser eye protection. Contracts with industry include both Cost and Firm Fixed Price using full and open competition, each evaluated and selected to appropriately share risk between industry and the government.												
E. Performance Metrics												
N/A												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) S61 / Acis Engineering Development					
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Administration	Allot	Various Government : Huntsville, Alabama	3.214	0.387		0.396		0.197		-		0.197	Continuing	Continuing	Continuing
Subtotal			3.214	0.387		0.396		0.197		-		0.197	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Warrior and Air Soldier System Development	C/CPFF	Various Government : Various Locations	59.133	1.492		1.768		1.349		-		1.349	Continuing	Continuing	Continuing
Subtotal			59.133	1.492		1.768		1.349		-		1.349	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	RO	Various Government : Various Locations	3.815	0.292		0.292		0.055		-		0.055	Continuing	Continuing	Continuing
Subtotal			3.815	0.292		0.292		0.055		-		0.055	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental and Operational Testing	RO	Various Activities : Various Locations	12.217	1.555		1.555		2.011		-		2.011	Continuing	Continuing	Continuing
Subtotal			12.217	1.555		1.555		2.011		-		2.011	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army											Date: February 2018			
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS					Project (Number/Name) S61 / Acis Engineering Development				
		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		78.379	3.726		4.011		3.612		-		3.612	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army			Date: February 2018		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>		Project (Number/Name) <i>S61 / Acis Engineering Development</i>	

Event Name	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Air SS Full Rate Production (FRP) Decision																												
Air SS Pre-planned Product Improv (P3I) Phase																												
Electronic Flight Bag (EFB) Integration & Qualification																												
Aircrew Combat Ensemble (ACE) Integration and Qualification																												
EFB and ACE Developmental Test/Operational Test (DT/OT)																												
EFB Production Decision																												
ACE Production Decision																												
Deferred Air SS Capabilities Develop & Qual																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>	Project (Number/Name) S61 / <i>Acis Engineering Development</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Air Soldier System System (Air SS) Dev, Dem and Qual Test	1	2012	4	2015
Air SS Full Rate Production (FRP) Decision	3	2018	3	2018
Air SS Pre-planned Product Improv (P3I) Phase	1	2016	4	2023
Electronic Flight Bag (EFB) Integration & Qualification	1	2017	4	2018
Aircrew Combat Ensemble (ACE) Integration and Qualification	1	2017	4	2019
EFB and ACE Developmental Test/Operational Test (DT/OT)	1	2018	4	2019
EFB Production Decision	1	2019	1	2019
ACE Production Decision	1	2020	1	2020
Deferred Air SS Capabilities Develop & Qual	1	2020	4	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army										Date: February 2018		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) S62 / Counter-Defilade Target Engagement - SDD			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
S62: Counter-Defilade Target Engagement - SDD	-	9.244	0.000	2.000	-	2.000	0.000	0.000	0.000	0.000	0.000	11.244
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Maneuver Center of Excellence (MCoE), FT Benning, GA (User Community) identifies the Counter Defilade Target Engagement (CDTE) as a critical capability gap for our Soldiers in combat. A Next Generation Counter Defilade Weapon to mitigate the critical capability gap (defeating defilade (hidden) targets from 35-500m) is required. The Next Generation Counter Defilade Weapon will provide the Infantry Soldier with a leap-ahead overmatch capability that allows the Soldier to engage defilade targets with a high degree of accuracy while posing minimal burden, in terms of weight and size. The system will integrate a weapon, ammunition, and a target acquisition/fire control subsystem that integrates thermal capability with direct-view optics, laser rangefinder, environmental sensors, ballistic computer, and internal display.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Support Next Generation Counter Defilade Weapon Requirements Development	9.244	-	2.000	-	2.000
FY 2019 Base Plans: Support Next Generation Counter Defilade Weapon Requirements Development.					
FY 2018 to FY 2019 Increase/Decrease Statement: Funding increased to support Counter Defilade Target Engagement (CDTE) Requirements Development					
Accomplishments/Planned Programs Subtotals	9.244	-	2.000	-	2.000

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• G16101: (G16101) Integrated Air Burst Weapon System Family	7.064	-	0.000	-	0.000	-	-	-	-	0.000	7.064

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>	Project (Number/Name) S62 / <i>Counter-Defilade Target Engagement - SDD</i>
<u>D. Acquisition Strategy</u> Utilize existing hardware to conduct user requested demonstrations and analyses that will be used to inform counter defilade requirements. As counter defilade requirements are finalized for the Next Generation Counter Defilade Weapon, acquisition approaches will be explored and selected in order to provide this capability to the user.		
<u>E. Performance Metrics</u> N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) S62 / Counter-Defilade Target Engagement - SDD					
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	Performed by Government : Various Activities	4.221	0.687	Mar 2018	-		0.400	Mar 2019	-		0.400	0.000	5.308	-
Contract Management Services	MIPR	ACC-APG : Aberdeen	-	0.146	Nov 2017	-		-		-		-	0.000	0.146	-
Subtotal			4.221	0.833		-		0.400		-		0.400	0.000	5.454	N/A
Remarks Program is under review by the Army Acquisition Executive (AAE) for a path forward.															
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contract Termination Costs	SS/BA	ATK : Plymouth, MN	127.624	8.216	Dec 2018	-		-		-		-	0.000	135.840	-
Subtotal			127.624	8.216		-		-		-		-	0.000	135.840	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Support	Option/ FFP	Various : PMSW, Picatinny Arsenal. NJ	0.425	0.195	Nov 2017	-		-		-		-	0.000	0.620	-
Training Development Support	MIPR	TACOM/PEO STRI : TACOM/PEO STRI	0.993	-		-		-		-		-	0.000	0.993	-
Engineering Support	MIPR	Government : Various	8.912	-		-		0.450	Mar 2019	-		0.450	0.000	9.362	-
Subtotal			10.330	0.195		-		0.450		-		0.450	0.000	10.975	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) S62 / Counter-Defilade Target Engagement - SDD					
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental/System Tests and Articles	SS/CPFF	Performed by Contractor : ATK, Plymouth, MN	19.604	-		-		-		-		-	0.000	19.604	-
Developmental/ Operational Tests	Various	Performed by Government : Various Activities	15.445	-		-		1.150	Mar 2019	-		1.150	0.000	16.595	-
Subtotal			35.049	-		-		1.150		-		1.150	0.000	36.199	N/A
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			177.224	9.244		0.000		2.000		-		2.000	0.000	188.468	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army			Date: February 2018		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>		Project (Number/Name) <i>S62 / Counter-Defilade Target Engagement - SDD</i>	

Event Name	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Design, Develop & Fabricate																												
Engineering and Training Development																												
Development Tests & Evaluation																												
Program Management																												
Pre-Production Qualification Testing (PPQT #2)																												
Limited User Testing (LUT)																												
MS C/Type Classification-Limited Procurement																												
Low Rate Initial Production (LRIP)-IOT&E																												
Design, Develop & Fabricate Support Requirements Development																												
Engineering Support																												
Test and Evaluation																												
Program Management FY19																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>	Project (Number/Name) <i>S62 / Counter-Defilade Target Engagement - SDD</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Design, Develop & Fabricate	1	2011	4	2017
Engineering and Training Development	1	2011	4	2017
Development Tests & Evaluation	1	2011	4	2017
Program Management	1	2011	4	2018
Pre-Production Qualification Testing (PPQT #2)	4	2016	2	2017
Limited User Testing (LUT)	2	2017	2	2017
MS C/Type Classification-Limited Procurement	2	2017	2	2017
Low Rate Initial Production (LRIP)-IOT&E	3	2017	4	2017
Design, Develop & Fabricate Support Requirements Development	1	2019	4	2019
Engineering Support	1	2019	4	2019
Test and Evaluation	1	2019	4	2019
Program Management FY19	1	2019	4	2019

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army										Date: February 2018		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) S63 / Individual Weapons Engineering Development			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
S63: Individual Weapons Engineering Development	-	7.631	6.961	5.756	-	5.756	6.129	23.352	22.556	16.810	0.000	89.195
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note FY 2019 New starts include Next Generation Carbine/Rifle. Program Element 0604601A / Infantry Support Weapons, S63 / Individual Weapons Engineering Development Small Arms Fire Control effort has moved to FF2 / Small Arms Fire Control in FY2018 within same Program Element.												
A. Mission Description and Budget Item Justification The Individual Weapons Engineering Development program provides funds to transition components or prototypes from Small Arms Improvement, Project S54, Program Element 0603827A, (Budget Activity 4) and other domestic and foreign sources of small arms weapons to demonstrate, test and evaluate capability near or at planned operational requirements. Small arms systems include weapons ranging up to 40 millimeter in caliber. Current and future efforts focus on system improvements designed to enhance lethality, target acquisition, fire control, usability, training effectiveness and reliability of weapons to include ammunition when developing and/or evaluating standard and non-standard weapons. Focus areas include system development, integration (to include human-systems), demonstration, test and evaluate components, prototypes and operational system prototypes of small arms weapons and/or enhancements. Benefits include continuous improvements to small arms weapons, fire control equipment, optics, gun barrels, ancillary equipment, training devices, component mounts, weapon mounts, and weapon/ammunition interface of current small arms fleet or new weapon systems.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: New Weapons								4.885	6.661	4.656	-	4.656
Description: Development of new weapons												
FY 2018 Plans: Modular Handgun System (MHS): Continue Production Verification Test activities including Soldier in the Loop Accuracy testing, award first production option for the handguns and ammunition to support completion of Initial Operational Test and Evaluation (IOT&E). Complete Energetic Material Qualification (EMQ) testing, and conduct Log Demo two (2). Conduct First Article Test (FAT) for both the full size and compact versions of the MHS. Conduct activities required to support Conditional Materiel Release, Type Classification ? Limited Production, and Full Materiel Release.												

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army			Date: February 2018			
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS	Project (Number/Name) S63 / Individual Weapons Engineering Development			
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Squad Designated Marksman Rifle (SDMR): Continue to inform requirements and the Doctrine, Organization, Training, Materiel, Leadership & Education, Personnel, and Facilities (DOTMLPF) analysis. Continue to develop Acquisition Strategy and initiate execution.						
Interim Combat Service Rifle (ICSR): Test and evaluate potential ICSR variants. The ICSR will be a lightweight derivative of a 7.62mm caliber rifle for selected Brigade Combat Teams (BCT) pending development, procurement and fielding of a new Next Generation Squad Automatic Rifle (NGSAR). BCTs require the capability to engage threat personnel with aimed lethal and accurate fires at ranges exceeding the current 5.56mm Carbine provided today. Threats are now typically engaging US Forces at ranges between 300m - 600m. US Forces require this interim capability to regain parity and limited overmatch while the longer term overmatch capability is under development.						
New Weapon Evaluations and Assessments: Continue to provide initial evaluation and assessment of new weapons.						
FY 2019 Base Plans: FY 2019 New Start: Next Generation Carbine/Rifle: Will begin the development of the Next Generation Carbine/Rifle. BCTs require the capability to engage protected and unprotected threat personnel with aimed lethal and accurate fires exceeding the capability of current carbines available today.						
Squad Designated Marksman Rifle (SDMR): Will continue to test and evaluate the Squad Designated Marksman Rifle, a highly accurate long range rifle system for Squad Designated Marksmen within BCTs.						
New Weapon Evaluations and Assessments: Will continue to provide initial evaluation and assessment of new weapons.						
FY 2018 to FY 2019 Increase/Decrease Statement: Decrease funding due to Modular Handgun System (MHS) RDTE efforts being completed in FY18.						
Title: Small Arms Weapons Enhancements		0.100	0.100	0.900	-	0.900
Description: Enhancements and developments of small arms weapons						
FY 2018 Plans:						

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army			Date: February 2018			
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS		Project (Number/Name) S63 / Individual Weapons Engineering Development		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Adaptive Lubricious Coatings: Develop manufacturing technology to support production of super hydrophobic and other coatings in support of Small Arms Weapons. Assess and evaluate current manufacturing process studies and assessments to adapt the coating technology into weapon Original Equipment Manufacturer manufacturing processes.						
Small Business Innovation Research (SBIR) Enhancements: Support Phase II Enhancement and/or initialization of Phase III SBIR activities.						
Weapon Upgrades and Accessories: Test, evaluate, and analyze ongoing and new activities to enhance small arms weapons.						
FY 2019 Base Plans: Adaptive Lubricious Coatings: Will continue to develop manufacturing technology to support production of super hydrophobic and other coatings in support of Small Arms Weapons. Will assess and evaluate current manufacturing process studies and assessments to adapt the coating technology into weapon Original Equipment Manufacturer manufacturing processes.						
Small Business Innovation Research (SBIR) Enhancements: Will continue to support Phase II Enhancement and/or initialization of Phase III SBIR activities.						
Weapon Upgrades and Accessories: Will continue to test, evaluate, and analyze ongoing and new activities to enhance small arms weapons.						
FY 2018 to FY 2019 Increase/Decrease Statement: Increase weapons enhancement taskings						
Title: Ammunition		0.050	0.050	0.050	-	0.050
Description: Description: Improvement of small arms ammunition						
FY 2018 Plans: Ammunition Upgrades: Evaluate the effect of new ammunition on small arms weapons.						
FY 2019 Base Plans:						

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army									Date: February 2018		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) S63 / Individual Weapons Engineering Development			
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Ammunition Upgrades: Will continue to evaluate the effect of new ammunition on small arms weapons.											
Title: Combat Optics							2.546	0.100	0.100	-	0.100
Description: Description: Improvement of combat optics											
FY 2018 Plans: Grenadier Sighting System (GSS): Finalize the Research and Development effort.											
Optics Upgrades: Perform engineering evaluations, verification and validation of weapon optics performance requirements.											
FY 2019 Base Plans: Optics Upgrades: Will continue to perform engineering evaluations, verification and validation of weapon optics performance requirements.											
Title: Research and Analysis							0.050	0.050	0.050	-	0.050
Description: Market Research and Cost Benefit Analysis											
FY 2018 Plans: Continue Market Research and Cost Benefit Analysis of new small arms weapon and/or enhancements for engineering and manufacturing development.											
FY 2019 Base Plans: Will continue Market Research and Cost Benefit Analysis of new small arms weapon and/or enhancements for engineering and manufacturing development.											
Accomplishments/Planned Programs Subtotals							7.631	6.961	5.756	-	5.756
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• S54: Small Arms Improvement	11.649	6.851	7.687	-	7.687	10.566	16.108	19.243	15.284	0.000	87.388
• G01507: COMPACT SEMI-AUTOMATIC SNIPER SYSTEM	-	-	46.236	-	46.236	58.999	21.097	12.237	25.363	Continuing	Continuing
• G13503: M4A1 CARBINE	40.493	43.150	69.306	1.800	71.106	30.394	17.037	11.010	2.166	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army									Date: February 2018			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) S63 / Individual Weapons Engineering Development				
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost	
• GB3007: M4 Carbine Mods	27.752	31.315	31.575	-	31.575	17.661	10.791	10.785	10.673	Continuing	Continuing	
• G01501: XM320 Grenade Launcher Module (GLM)	3.062	4.524	0.697	-	0.697	0.382	7.945	15.859	19.824	Continuing	Continuing	
• G15325: Handgun	2.000	8.326	48.251	-	48.251	22.216	-	-	-	Continuing	Continuing	
• GL3200: Items Less Than \$5.0m (WOCV-WTCV)	2.331	5.075	3.174	1.397	4.571	1.337	2.777	2.880	2.988	Continuing	Continuing	
• GC0925: Modifications Less Than \$5.0m (WOCV-WTCV)	3.157	2.219	5.577	-	5.577	5.089	3.386	3.158	3.150	Continuing	Continuing	
• S58: Soldier Enhancement Program	9.528	3.353	2.885	-	2.885	2.940	2.999	3.016	2.814	0.000	27.535	
Remarks												
In support of Small Arms Requirements, components or prototypes developed in Small Arms Improvement, Project S54, Program Element 0603827A, (Budget Activity 4) is transitioned to Individual Weapons Engineering Development, Project S63, Program Element 0604601A, (Budget Activity 5) to conduct engineering and manufacturing development. Once the component, prototype or operational prototype achieves Milestone C and type classification the item transitions to small arms weapon production or modification program.												
D. Acquisition Strategy												
Primary strategy is to mature and finalize design efforts, award Research, Development, Test and Evaluation (RDT&E) hardware contracts, and test and evaluate systems that result in type classification and follow-on production contract awards.												
E. Performance Metrics												
N/A												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS						Project (Number/Name) S63 / Individual Weapons Engineering Development			
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Allot	PM Soldier Weapons, : Picatinny Arsenal	9.425	0.301	Mar 2017	0.301		0.300	Mar 2019	-		0.300	Continuing	Continuing	Continuing
Travel	MIPR	PM Soldier Weapons, : Picatinny Arsenal	1.287	0.062	Mar 2017	0.062		0.060	Mar 2019	-		0.060	Continuing	Continuing	Continuing
Subtotal			10.712	0.363		0.363		0.360		-		0.360	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Fabrication	Various	Various : Multiple Contractors	2.900	0.300	Mar 2017	0.274		0.300	Mar 2019	-		0.300	Continuing	Continuing	Continuing
Hardware Development	MIPR	Army Research Development Engineering Centers, : Multiple	8.004	0.061	Mar 2017	0.035		0.050	Mar 2019	-		0.050	Continuing	Continuing	Continuing
Subtotal			10.904	0.361		0.309		0.350		-		0.350	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering	MIPR	Army Research Development Engineering Centers, : Multiple	58.100	4.000	Mar 2017	4.004		3.938	Mar 2019	-		3.938	Continuing	Continuing	Continuing
Logistics	MIPR	TACOM, : Warren	4.746	0.100	Mar 2017	0.124		0.100	Mar 2019	-		0.100	Continuing	Continuing	Continuing
Human Research and Engineering	MIPR	Army Research Laboratory, :	3.621	0.100	Mar 2017	0.124		0.100	Mar 2019	-		0.100	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS						Project (Number/Name) S63 / Individual Weapons Engineering Development			
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		Aberdeen Proving Ground													
Subtotal			66.467	4.200		4.252		4.138		-		4.138	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Testing	MIPR	Army Developmental Test Command, : Aberdeen Proving Ground	24.344	1.200	Mar 2017	0.686		0.500	Mar 2019	-		0.500	Continuing	Continuing	Continuing
Operational Testing	MIPR	Army Test and Evaluation Command, : Aberdeen Proving Ground	13.798	1.200	Mar 2017	1.008		0.204	Mar 2019	-		0.204	Continuing	Continuing	Continuing
Validation Testing	MIPR	Army Test and Evaluation Centers, : Multiple	9.212	0.307	Mar 2017	0.343		0.204	Mar 2019	-		0.204	Continuing	Continuing	Continuing
Subtotal			47.354	2.707		2.037		0.908		-		0.908	Continuing	Continuing	N/A
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			135.437	7.631		6.961		5.756		-		5.756	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army	Date: February 2018
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Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS	Project (Number/Name) S63 / Individual Weapons Engineering Development
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Event Name	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NEW WEAPONS																												
Modular Handgun System (MHS)																												
Squad Designated Marksman Rifle (SDMR)																												
Next Generation Carbine/Rifle																												
New Weapon Evaluations and Assessments																												
SMALL ARMS WEAPONS ENHANCEMENTS																												
Adaptive Lubricious Coatings																												
Small Business Innovation Research (SBIR) Enhancements																												
Weapon Upgrades and Accessories																												
AMMUNITION																												
Ammunition Upgrades																												
COMBAT OPTICS																												
Grenadier Sighting System (GSS) for the M320 Grenade Launcher																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army			Date: February 2018		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>		Project (Number/Name) S63 / <i>Individual Weapons Engineering Development</i>	

Event Name	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Optics Upgrades																												
FIRE CONTROL																												
Small Arms Fire Control-Squad																												
Fire Control Upgrades																												
RESEARCH AND ANALYSIS																												
Research and Analysis of Small Arms																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>	Project (Number/Name) <i>S63 / Individual Weapons Engineering Development</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NEW WEAPONS	1	2007	4	2023
Individual Carbine Competition	1	2010	4	2013
Modular Handgun System (MHS)	1	2012	4	2018
M3 Multi-Role Anti-Armor Personnel Weapon System (MAAWS)	1	2015	4	2016
Precision Sniper Rifle (PSR)	1	2015	4	2016
Squad Designated Marksman Rifle (SDMR)	1	2014	4	2019
Next Generation Carbine/Rifle	1	2019	4	2024
New Weapon Evaluations and Assessments	1	2018	4	2023
SMALL ARMS WEAPONS ENHANCEMENTS	1	2008	4	2023
Compact Semi-Automatic Sniper System (CSASS)	1	2015	4	2016
Gain Twist Rifling	1	2013	4	2014
Small Arms Signature Reduction (SASR) Suppressor Technology	1	2011	4	2014
Powered Rail now known as Intelligent Rail	1	2013	4	2016
Sniper Upgrades	1	2016	4	2016
Adaptive Lubricious Coatings	1	2018	4	2019
Small Business Innovation Research (SBIR) Enhancements	1	2015	4	2019
Weapon Upgrades and Accessories	1	2008	4	2023
AMMUNITION	1	2008	4	2023
XM1112 40MM Airburst Non-Lethal Munitions	1	2010	4	2016
Ammunition Upgrades	1	2008	4	2023
COMBAT OPTICS	1	2008	4	2023
Mounted Machine Gun Optics (MMO)	1	2015	4	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army			Date: February 2018	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS		Project (Number/Name) S63 / Individual Weapons Engineering Development	
	Start		End	
Events	Quarter	Year	Quarter	Year
Squad Fire Control Optic	1	2014	4	2015
Grenadier Sighting System (GSS) for the M320 Grenade Launcher	1	2009	4	2018
Optics Upgrades	1	2008	4	2023
FIRE CONTROL	1	2008	4	2023
Small Arms Fire Control-Squad	1	2017	4	2017
Fire Control Upgrades	1	2008	4	2017
RESEARCH AND ANALYSIS	1	2012	4	2023
Research and Analysis of Small Arms	1	2015	4	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army										Date: February 2018		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) S64 / Common Remotely Operated Wpn Sys (CROWS)			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
S64: Common Remotely Operated Wpn Sys (CROWS)	-	11.548	22.500	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	34.048
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

In support of an Army directed requirement (reference DAPR-ZA Memorandum, date 5 July 2016) to provide an increased lethality modification to the Joint Light Tactical Vehicle (JLTV), to serve as the Infantry Brigade Combat Team (IBCT) light reconnaissance vehicle, an upgraded remote weapon station will be developed that integrates a medium-caliber weapon system. Development will also begin on integration of additional effectors, including an improved and modified remotely operated weapon station for system and component level development, to include mechanical and software integration of Stinger surface-to-air missile.

The Maneuver Support Center of Excellence (MSCoE) at FT Leonard Wood, Missouri (user community) has identified continued development of the Common Remotely Operated Weapon Station (CROWS) as a critical improvement for the Soldier in a combat environment. By addressing the capability gap of non-turreted, lightly armored vehicles where the gunner is exposed to enemy fire, the current CROWS system provides the ability to rapidly and accurately locate and engage the enemy while allowing platform gunners to remain under armor, thereby providing greater protection and increasing overall lethality.

Next generation requirements for the CROWS are identified in the CROWS Increment II Capability Development Document (CDD). CROWS Increment II capability improvements will bolster overall situational awareness, survivability and lethality. Increment II requirements include improved sensor systems for enhanced identification ranges; wider fields of view; improved on-the-move accuracy; training capability; battlefield obscurants; mission data recording for After Action Reviews (AAR); increased lethality using legacy and future anti-personnel and anti-materiel precision scalable lethal and non-lethal weapon systems; improved ballistics protection; adaptability to integrate on a variety of legacy and future platforms including ground vehicles, watercraft, semi-autonomous and autonomous platforms; precision targeting including visible and infrared (IR) pointers; target hand-off; slew-to-cue; escalation of force (EOF) capabilities; and other additional system modifications and improvements.

Obsolescence and Increment II requirements will address recommendations identified in the Operational Test Agency Milestone Assessment Report (OMAR) and user community feedback. These modifications include, but are not limited to: improved optics survivability; auto-zoom; improved auto-tracking; improved sensors for increased situational awareness; and improved rounds counter. Additionally, development efforts will include system and component level reliability improvements that will extend system life and reduce overall CROWS logistics footprint.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Medium Caliber Remote Weapon Station (RWS) Development	4.431	16.875	-	-	-
FY 2018 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army				Date: February 2018		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS		Project (Number/Name) S64 / Common Remotely Operated Wpn Sys (CROWS)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Purchases prototypes and design improvements for a remote weapon station that integrates a medium-caliber weapon system. Contract efforts will culminate in delivery of prototypes of a modified remote weapon station for qualification testing in the following year. FY 2018 to FY 2019 Increase/Decrease Statement: Funded amount of contract effort decreases as fabrication of prototypes ends.						
Title: Technology Refresh and Obsolescence Description: Description: Technology Refresh and Obsolescence		0.920	-	-	-	-
Title: Engineering Support Description: Description: Government Engineering Support. FY 2018 Plans: Provides engineering support and oversight of the development of an improved remote weapon station that integrates a medium-caliber weapon system and an integration kit for additional effectors, such as the Stinger surface-to-air missile. FY 2018 to FY 2019 Increase/Decrease Statement: Decrease in funded mount as engineering support and oversight of development ends.		4.608	3.500	-	-	-
Title: Test and Evaluation Description: Description: Test and Evaluation FY 2018 Plans: Begin planning and documentation for government testing and evaluation of prototype remote weapon stations that integrate a medium-caliber weapon system and an integration kit for additional effectors, such as the Stinger surface-to-air missile. FY 2018 to FY 2019 Increase/Decrease Statement: Decrease to funded amount as government testing and evaluation ends.		0.485	0.625	-	-	-
Title: Program Management Description: Description: Program Management. FY 2018 Plans:		1.104	1.500	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army							Date: February 2018				
Appropriation/Budget Activity 2040 / 5			R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) S64 / Common Remotely Operated Wpn Sys (CROWS)				
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Will provide program management oversight of development, testing and evaluation of an improved remote weapon station that integrates a medium-caliber weapon system and an integration kit for additional effectors, such as the Stinger surface-to-air missile.											
FY 2018 to FY 2019 Increase/Decrease Statement: Program management labor costs transition to the Operations & Maintenance, Army (OMA) account in FY2019.											
Accomplishments/Planned Programs Subtotals							11.548	22.500	-	-	-
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• G04700: Common Remotely Operated Weapons Station	25.164	0.750	35.968	3.378	39.346	19.825	24.560	-	-	Continuing	Continuing
• FI2: Lightweight 30mm Cannon	-	5.500	0.000	-	0.000	1.384	-	-	-	0.000	6.884
• G13800: GUN	-	-	7.434	-	7.434	19.825	9.913	-	-	0.000	37.172
AUTOMATIC 30MM M230											
Remarks											
D. Acquisition Strategy											
The modified medium-caliber remote weapon station that will begin development in FY2018 shall use an incremental acquisition approach in its strategy. The first increment will be part of an Urgent Materiel Release and will modify the legacy M153 Common Remotely Operated Weapon Station (CROWS) in order to integrate the XM914 30mm autocannon. The second increment will require further design and development changes, upgrade the optics on the remote weapon station in order to increase the target identification range of the station to match the capability of the weapon, and incorporate a coaxial machine gun as a secondary weapon system.											
The integration of additional effectors, such as the Stinger surface-to-air missile system, will leverage prior efforts to integrate the Javelin missile on the remote weapon station.											
The legacy Common Remotely Operated Weapon Station (CROWS) used a single-step acquisition approach in its strategy. The CROWS achieved Type Classification Standard in 3QFY2011, Full Materiel Release in 3QFY2012 and Full Rate Production in 4QFY2012, in accordance with the Capability Production Document (CPD) Increment I, as clarified in June 2009. Capability Development Document Increment II was approved in October 2015 addressing requirements for the next generation of CROWS.											

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>	Project (Number/Name) S64 / <i>Common Remotely Operated Wpn Sys (CROWS)</i>
<p>The program objective is to continue developing, improving and fielding the current generation (Increment I) and next generation (Increment II) of CROWS on various platforms in accordance with the Basis of Issue Plan (BOIP). The program supports new and emerging urgent requirements like the integration of the Mine Resistant Ambush Protected (MRAP) family of vehicles, ground combat systems, Joint Lightweight Tactical Vehicles (JLTV) and fixed site mounting systems to support Integrated Base Defense (IBD).</p> <p><u>E. Performance Metrics</u> N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) S64 / Common Remotely Operated Wpn Sys (CROWS)					
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	PM Soldier Weapons : Picatinny Arsenal, NJ	1.641	1.104	Feb 2017	1.500	Feb 2018	-		-		-	0.000	4.245	-
Subtotal			1.641	1.104		1.500		-		-		-	0.000	4.245	N/A
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Refresh, Obsolescence and Increment II Enhancements	C/FFP	Kongsberg Protech Systems USA : Johnstown, PA	10.714	0.920	Jun 2017	-		-		-		-	0.000	11.634	-
Medium Caliber RWS Development	C/FFP	TBD : TBD	-	4.431	Dec 2017	16.875	Mar 2018	-		-		-	0.000	21.306	-
Subtotal			10.714	5.351		16.875		-		-		-	0.000	32.940	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	MIPR	ARDEC : Picatinny Arsenal, NJ	1.757	4.608	Feb 2017	3.500	Feb 2018	-		-		-	0.000	9.865	-
Subtotal			1.757	4.608		3.500		-		-		-	0.000	9.865	N/A
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Planning and Execution	MIPR	Multiple : Multiple	0.322	0.485	Feb 2017	0.625	Feb 2018	-		-		-	0.000	1.432	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) S64 / Common Remotely Operated Wpn Sys (CROWS)				

Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.322	0.485		0.625		-		-		-	0.000	1.432	N/A

	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	14.434	11.548	22.500	-	-	-	0.000	48.482	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army			Date: February 2018		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>		Project (Number/Name) S64 / <i>Common Remotely Operated Wpn Sys (CROWS)</i>	

Event Name	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Contractor Design and Fabrication																												
Engineering Support (Government)																												
Development Test & Evaluation																												
Program Management																												
Increment II Product Improvement																												
Medium Caliber Remote Weapon Station Development																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>	Project (Number/Name) <i>S64 / Common Remotely Operated Wpn Sys (CROWS)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Contractor Design and Fabrication	1	2016	4	2017
Engineering Support (Government)	3	2015	4	2018
Development Test & Evaluation	3	2015	4	2018
Program Management	3	2015	4	2018
Increment II Product Improvement	2	2017	4	2017
Medium Caliber Remote Weapon Station Development	1	2018	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army										Date: February 2018		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) S70 / Personnel Recovery Support System (PRSS)			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
S70: Personnel Recovery Support System (PRSS)	-	1.084	1.330	0.968	-	0.968	0.990	0.468	0.642	0.563	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note Not applicable for this item.												
A. Mission Description and Budget Item Justification This project provides the continued maturation of PRSS products that enable operations to report and locate isolated, missing, detained or captured Soldiers. The PRSS program consists of the enhancement of existing products to ensure continued successful interoperability within the relevant theater of operations and the Continental United States (CONUS), and testing of the encrypted Personnel Recovery Device (PRD) that operates over a secure architecture.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Development of Personnel Recovery Support System (PRSS) Description: Integration, evaluation, testing and qualification of PRSS products to ensure continued successful interoperability within the relevant theater of operation, and development of a PRD that operates over a secure architecture. FY 2018 Plans: Conduct a Limited User Test and an Operational Test of production PRDs in support of a full rate production decision. FY 2019 Base Plans: Develop and test an alternate PRD secure waveform to ensure continual cyber security is maintained. FY 2018 to FY 2019 Increase/Decrease Statement: FY 2019 funding is sufficient to maintain operational continuity.								1.084	1.330	0.968	-	0.968
Accomplishments/Planned Programs Subtotals								1.084	1.330	0.968	-	0.968

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army										Date: February 2018	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) S70 / Personnel Recovery Support System (PRSS)			
C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2019</u>	<u>FY 2019</u>	<u>FY 2019</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>Complete</u>	<u>Total Cost</u>
• G01101: Other Procurement, Army, G01101-Personnel Recovery Support System (PRSS)	10.856	5.390	5.948	4.300	10.248	4.823	5.247	5.194	3.075	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
Execute PRSS program development effort for performance optimization through contracts with industry and Military Interdepartmental Purchase Requests to other Governmental agencies. Perform continuing development and test of new waveforms and hardware to ensure successful interoperability for personnel recovery, and to mitigate potential security compromises to the PRSS system.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) S70 / Personnel Recovery Support System (PRSS)					
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Adminstration	Allot	Various Government : Huntsville, Alabama	0.924	0.023		0.025		0.016		-		0.016	Continuing	Continuing	Continuing
Subtotal			0.924	0.023		0.025		0.016		-		0.016	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Personnel Recovery Support System Development Systems Engineering	MIPR	Various Organizations : Various Locations	7.252	0.466		0.630		0.442		-		0.442	Continuing	Continuing	Continuing
Subtotal			7.252	0.466		0.630		0.442		-		0.442	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	Various Organizations : Various Locations	1.600	-		0.475		0.435		-		0.435	Continuing	Continuing	Continuing
Subtotal			1.600	-		0.475		0.435		-		0.435	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Testing / Operational Testing	MIPR	Various Organizations : Various Locations	2.586	0.595		0.200		0.075		-		0.075	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) S70 / Personnel Recovery Support System (PRSS)				

Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			2.586	0.595		0.200		0.075		-		0.075	Continuing	Continuing	N/A

	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	12.362	1.084	1.330	0.968	-	0.968	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army

Date: February 2018

Appropriation/Budget Activity
2040 / 5

R-1 Program Element (Number/Name)
PE 0604601A / *INFANTRY SUPPORT WEAPONS*

Project (Number/Name)
S70 I Personnel Recovery Support System (PRSS)

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>	Project (Number/Name) <i>S70 / Personnel Recovery Support System (PRSS)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Personnel Recovery Support System (PRSS) Development Oversight	1	2010	4	2023
PRSS Development and Test	1	2010	4	2023
PRSS Prototype Hardware Build and Integration	3	2010	2	2016
PRSS LUT and Operational Testing	3	2018	4	2018
PRSS Upgrades & Adaptations to New Platforms	1	2015	4	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army										Date: February 2018		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) VS5 / Soldier Protective Equipment			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
VS5: Soldier Protective Equipment	-	2.114	1.758	6.057	-	6.057	6.777	8.482	9.826	9.655	0.000	44.669
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
This funding supports engineering and manufacturing development and full rate production decision reviews of Soldier Protective Equipment. It leverages advancements in technology to continue improvements to hard and soft body armor components, helmets and other personal protective equipment.												
B. Accomplishments/Planned Programs (\$ in Millions)												
								FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Soldier Protective Equipment								2.114	1.758	6.057	-	6.057
Description: The objective of this effort is to increase the Warfighter lethality and mobility, by optimizing Soldier protection while effectively managing all life cycle aspects of Personal Protective Equipment (PPE).												
FY 2018 Plans: Conduct Soldier Protection Systems (SPS) Full Up System Level (FUSL) Experiment 1 & 2, System Integration Human Factors Evaluations (HFE) 3, and SPS improvement HFE. Conduct follow on First Article Tests (FAT) and System Level Testing for the Vital Torso Protection (VTP) systems. Prepare for the Full Rate Production (FRP) decision for VTP by preparing the Army Evaluation Command (AEC) / Director of Operational Test and Evaluation (DOTE) Live fire Test reports. Continue to evaluate and develop system and subsystem technologies across the PPE portfolio (extremities, torso and vital torso, head, eye and face protection) from emerging ballistic and blast threats. Continue to test ballistic properties of current PPE after exposure to extreme storage conditions for better shelf and service life predictions. Continue development of materials and technologies to reduce SPS weight and bulk at the system, subsystem and component level and continue efforts to characterize and increase durability and functional service life. Continue human factors and environmental/exposure testing (cold weather, durability, etc.) and qualification of the Transition Combat Eye Protection (TCEP) to allow its inclusion on the Authorized Protective Eyewear List (APEL).												
FY 2019 Base Plans: Continue to evaluate and develop system and subsystem technologies across the PPE portfolio (extremities, torso and vital torso, head, eye and face protection) from emerging ballistic/blast threats. Continue to test ballistic properties of current PPE after exposure to extreme storage conditions for better shelf and service life												

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army				Date: February 2018	
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS		Project (Number/Name) VS5 / Soldier Protective Equipment	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
<p>predictions. Continue SPS system human factors and environmental/exposure testing (cold weather, durability, etc.).</p> <p><i>FY 2018 to FY 2019 Increase/Decrease Statement:</i> Funding change in Soldier Protective Equipment portfolio is due to anticipated requirement changes in FY18 and FY19. Incorporate 6.4 development efforts as a result of Congressional Plus up in FY17.</p>					
Accomplishments/Planned Programs Subtotals	2.114	1.758	6.057	-	6.057

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• VS4: RDTE, 0603827A.VS4, Soldier Protective Equipment	38.691	10.281	8.224	-	8.224	2.869	4.496	4.967	6.567	0.000	76.095
• OMA: OMA, 121017, Central Funding & Fielding	59.805	74.486	69.678	-	69.678	69.752	69.317	69.161	69.247	0.000	481.446

Remarks

D. Acquisition Strategy
 Acquisition strategies for these programs vary in methods, and range from: 1) Material Change programs that result in engineering changes to existing systems to; 2) Traditional development programs that include an Engineering and Manufacturing Development phase ranging in duration from 12 to 48 months, depending on the level of design complexity and testing required.

E. Performance Metrics
 N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS				Project (Number/Name) VS5 / Soldier Protective Equipment					
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Allot	Various SPIE : Various	0.167	0.150		0.156		0.300		-		0.300	0.000	0.773	-
Subtotal			0.167	0.150		0.156		0.300		-		0.300	0.000	0.773	N/A
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prototype Contracts	Various	Various : Various	31.087	1.326		1.152		2.510		-		2.510	Continuing	Continuing	-
Prod Sys Engineering Spt	MIPR	Various : Various	8.109	-		-		0.300		-		0.300	Continuing	Continuing	-
Subtotal			39.196	1.326		1.152		2.810		-		2.810	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Engineering Spt	MIPR	Various : Various	2.587	0.280		0.150		0.300		-		0.300	0.000	3.317	-
Subtotal			2.587	0.280		0.150		0.300		-		0.300	0.000	3.317	N/A
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Environmental/HFE	MIPR	Various DTC & OTC : Various DTC & OTC	10.328	0.358		0.300		2.647		-		2.647	Continuing	Continuing	-
Subtotal			10.328	0.358		0.300		2.647		-		2.647	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army											Date: February 2018				
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / INFANTRY SUPPORT WEAPONS					Project (Number/Name) VS5 / Soldier Protective Equipment					
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			52.278	2.114		1.758		6.057		-		6.057	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army			Date: February 2018		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>		Project (Number/Name) <i>VS5 / Soldier Protective Equipment</i>	

Event Name	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Test and Qualify Improvements to SPS through FY23																												
TEP Transition to FRP	1																											
Conduct IHPS FAT																												
IHPS LFT																												
IHPS Transition to FRP																												
TCEP LFT																												
TCEP APEL Update																												
TCEP Durability/Cold Weather Test																												
SPS System Level Test Technology Insertions																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>INFANTRY SUPPORT WEAPONS</i>	Project (Number/Name) <i>VS5 / Soldier Protective Equipment</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Test and Qualify Improvements to SPS through FY23	1	2015	4	2023
TEP Transition to FRP	1	2017	1	2017
Conduct IHPS FAT	4	2017	4	2017
IHPS LFT	4	2017	4	2017
IHPS Transition to FRP	2	2019	2	2019
TCEP LFT	4	2017	4	2017
TCEP APEL Update	1	2018	1	2018
TCEP Durability/Cold Weather Test	2	2018	3	2018
SPS System Level Test Technology Insertions	1	2017	4	2023